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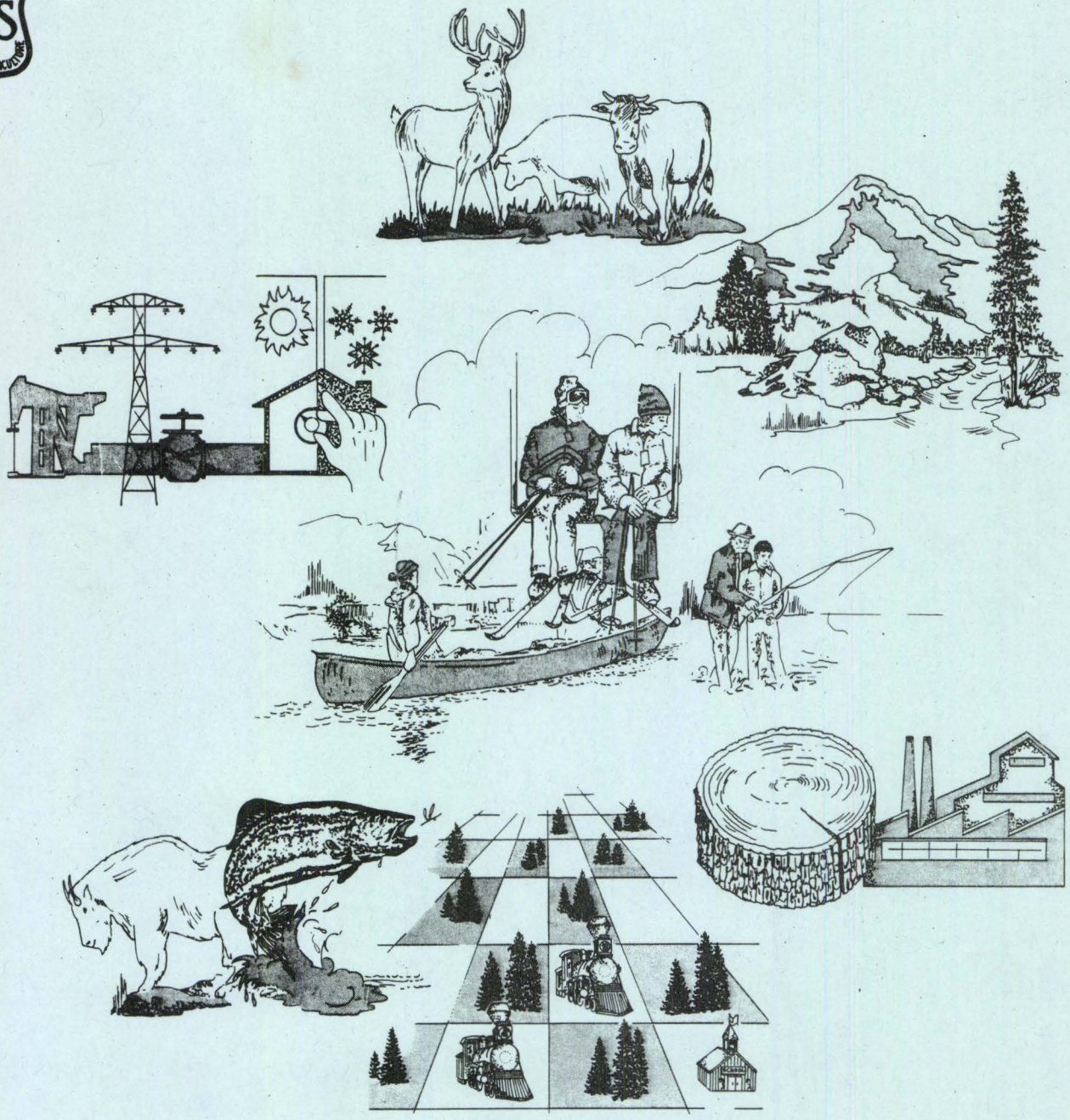
United States
Department of
Agriculture

Forest
Service

**Northern
Region**

The Northern Regional Guide



Reflects the June 10, 1983 Record of Decision

NORTHERN REGIONAL GUIDE

U.S. Department of Agriculture
Forest Service
Northern Region
Missoula, Montana

The Northern Regional Plan was prepared in accordance with provisions of the National Forest Management Act (90 Stat. 2949 et seq.) (16 U.S.C. 1601-1614) as stated in 36 CFR 219, Subpart A, National Forest System Land and Resource Management Planning, final rules and regulations. The responsible official is:

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1/ This copy is intended for Forest Service use. It reflects the June 10, 1983, Record of Decision

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I. INTRODUCTION

The purpose of the Northern Region Guide is to provide broad management direction to the Region's 15 National Forests 1/ and 4 National Grasslands and to provide coordination with State and Private Forestry and Research programs. The Northern Region has 25.3 million acres of National Forest lands in Montana, North Dakota, northwestern South Dakota, northern Idaho, and eastern Washington (figure I-1).

The following Regional Guide:

- Contains a description of the Forest Service planning process and identifies how the Regional Guide fits into the overall Forest Service planning process;

- Lists standards and guidelines for National Forest System land and resource management;

- Assigns the current RPA Program objectives and targets to the National Forests as planning guidelines, and displays the State and Private Forestry program;

- Identifies research needs and direction associated with land and resource management;

- Outlines the monitoring and evaluation process which will be employed to determine and report achievements and effects of plan goals and objectives; and

- Presents a summary of the analysis of the management situation, with background on historical development, public demand for goods and services, and the Region's ability to supply the goods and services.

DESCRIPTION OF PLANNING PROCESS 2/

To put the Regional Guide into proper perspective, it is important to have a general understanding of how it fits into the overall Forest

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1/ Three National Forests in north Idaho, the Kaniksu, Coeur d'Alene, and St. Joe, are administered by one Forest Supervisor as the Idaho Panhandle National Forests.

2/ Source: USDA-Forest Service, Washington Office, Land Management Planning, 1981.

Figure I-1

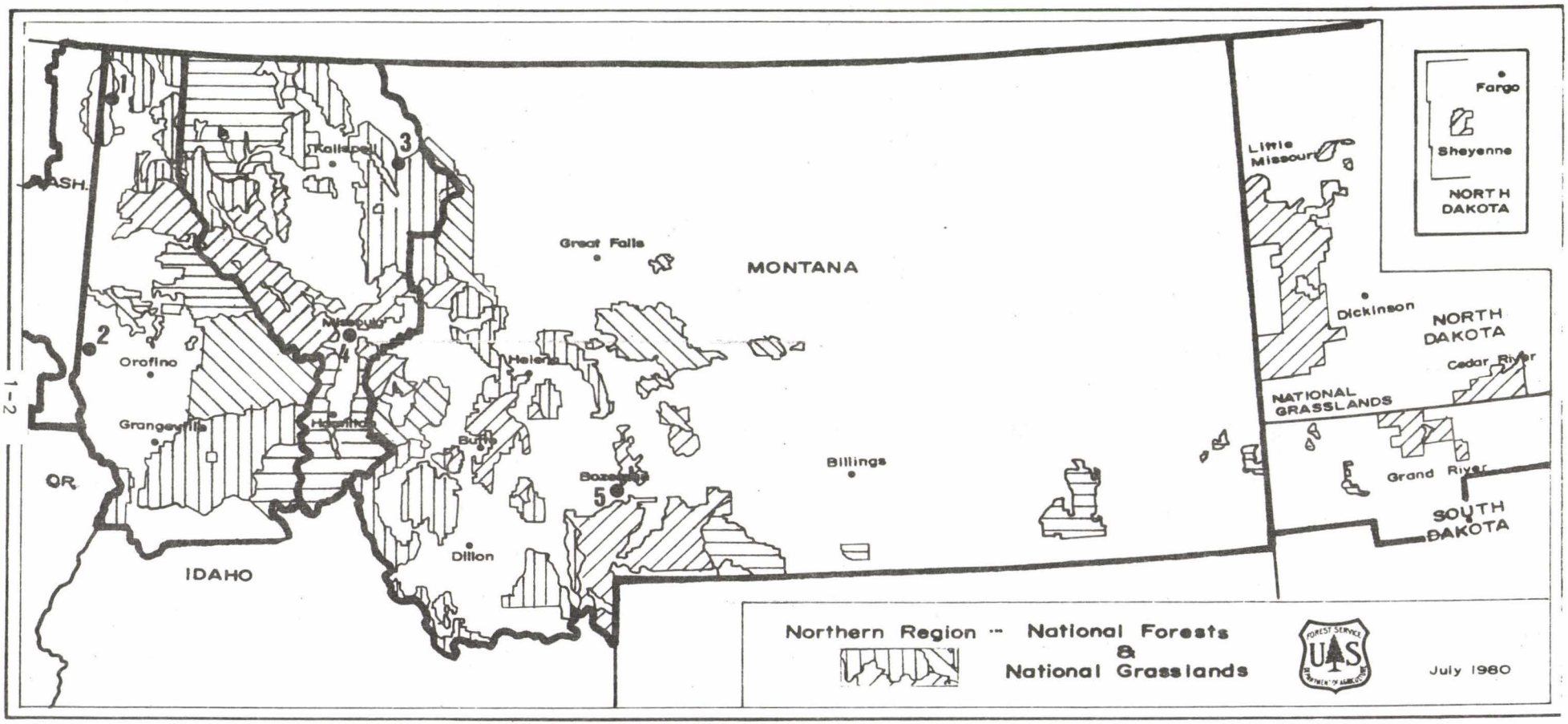


Fig. I-1 Location of National Forests, National Grasslands and Forest Science Laboratories in the Northern Region. Numbers indicate research facilities in:

1- PRIEST LAKE, ID.
2- MOSCOW, ID.
3- CORAM, MT.
4- MISSOULA, MT.
5- BOZEMAN, MT.

Service planning process. As required by the Renewable Resources Planning Act as amended, and related planning regulations, the Forest Service has a three-level integrated planning process consisting of:

National	RPA Assessment and Program
Regional	Regional Guide
Local	Forest Land and Resource Management Plans for the National Forests
	State Forest Resource Plans developed by the State for State and private land
	Research Plans

The planning process is characterized by a continuous cycle that must be viewed with a time perspective. Each plan has a special relationship to other plans prepared both before and after it. The RPA Program will be updated every 5 years. All other plans will be examined at least every 5 years and updated, as needed, to reflect new data, needed changes, and results of other plans. These interrelationships are described below:

RPA Assessment and Program

Every 10 years, a comprehensive national assessment is made of the forest and rangeland renewable resource situation--timber, range, water, fish, wildlife, outdoor recreation, and wilderness. Projections of future supply and demand are made for each of these resources in the RPA Assessment. The findings of the Assessment are then used to help determine the desired level of future outputs resulting from Forest Service programs (National Forests, Research, and State and Private Forestry). Alternative levels of outputs and associated costs are examined in the RPA Program, which is prepared every 5 years. Based on an analysis of these alternatives, along with consideration of public views, the Secretary of Agriculture decides upon a Recommended RPA Program for the Forest Service. The Recommended RPA Program along with a Presidential Statement of Policy are transmitted to Congress. The Congress may accept or revise the Policy. The final Policy Statement and Program serve as the guide for planning and developing future Forest Service budget proposals. However, actual Program implementation is limited by annual appropriations which may or may not fully implement Forest Plans.

Locally developed plans keyed to land and resource capabilities play a key role in determining the Forest Service's capability to respond to national demands identified in the Assessment. In developing the 1980 RPA Assessment and Program, each Region analyzed its capability based on

existing plans and other information available at the time (1977). Using these plans, each Region developed alternative proposals which were analyzed at the national level to arrive at the 1980 RPA Recommended Program.

Regional Planning

A primary purpose of Regional planning is to help link the RPA Assessment and Program with local planning (Forest and States). By being in the middle of the planning process, Regional planning serves a dual role and is done in two separate stages:

Stage 1. The first stage is related to the development of the National RPA Assessment and Program. It involves an analysis of local plans and other available information on Regional capability. Using this information, Regional line officers provide input into the National RPA process. They also participate as a member of the Forest Service decisionmaking group in developing the National RPA Assessment and Program and ultimately negotiate with the Chief for the Regional share of the National Program.

Stage 2. Once the National RPA Recommended Program is finalized, the Chief distributes to each Regional Unit their share of the National Program in terms of output targets and associated costs. At this point, the second stage of Regional planning begins with the development of a Regional Guide which does three things:

1. Displays the Regional RPA Program along with its distribution among the Forests and a description of State and Private Forestry and Research programs. The RPA output targets represent each Unit's share of the national 1980 RPA Program based on existing plans and other available information used to develop the RPA Program and subsequently budget proposals.

2. Provides planning direction for developing Forest Plans, including the range of alternatives to be considered. Planning direction may also result from the resolution of certain Regional issues relevant to land management decisions. A test of relevancy is whether the Forests need the issue resolved at the Regional level to guide their planning.

3. Develops the standards and guidelines for the management of the National Forests as required by section 6 of the National Forest Management Act of 1976 and the Implementing Regulations.

To put this Regional Guide into perspective, it is the means used to communicate national and Regional direction for Forest planning and pertinent information needed for State and research planning. It must be viewed as a document prepared at this particular time after Stage 1 has been completed and is primarily based on the 1980 RPA data.

The Regional Guide will be subject to change as new and better data on biological capabilities and social, economic, and environmental effects become available through the Forest and State planning process.

Local Plans

By collecting and integrating basic data on biological potential, resource inventories, and research problems, local plans become the basic building blocks for Regional and national planning. The Forest and State plans now being developed will play an important role in shaping the next RPA Assessment (1989) and Program (1985).

Forest Plans will include a reasonable range of alternatives, both above and below the 1980 RPA Program. One or more alternatives will be designed to meet the Forest's share of the 1980 RPA Program. Other alternatives will address the long-term goals established by Congress in the revised Statement of Policy and specific issues on the Forests. The Regional Forester's decisions on individual Forest Plans are not constrained by the RPA Program since it was primarily based on Plans existing in 1977. Rather, the emphasis in Forest planning will be on the future and how the Forest can best be used and managed to meet people's needs.

Program Development and Budgeting

The RPA Program, Regional Guide, and local plans set direction on what should be done in terms of objectives, output targets, standards and guidelines. They also include an estimated cost to implement the plans based on the best information available. However, the rate of implementation is dependent upon the amount of resources (funding and work force) made available to the Forest Service through the annual Federal budgeting and appropriation processes.

The Program Development and Budgeting process provides an opportunity to reflect current conditions and changes that may have occurred since the RPA Program was developed. Several budget levels, all based on the RPA Program, are prepared for Regions, Research Stations, and State and Private Forestry areas. Budget proposals which depart from the Recommended RPA Program are explained and justified.

Budget proposals represent firm commitments by these units to achieve a certain level of output targets at a specified cost. Therefore, cost estimates are updated annually to reflect current conditions and the details of a specific set of project proposals (e.g., timber sales and associated road costs).

Although RPA targets and Forest Service plans serve as the basis for the initial budget proposals, they are frequently adjusted to reflect current conditions and the Administration and Congressional priorities as expressed through the appropriation process. Once Congress passes the Appropriation Act, the budget becomes a firm contract of work for

which the Forest Service is held accountable. Normally, these adjustments made during the budgeting process are within the scope of Regional and Forest Plans.

Fiscal Year 1981 was the first year of the 1980 RPA 5-Year Program. The distribution of Fiscal Year 1981 funds was based upon existing resource and land management plans, the best cost opportunities, local demands, local conditions, historical trends, and future outputs expected. The Fiscal Year 1982 Program will be distributed in the same way; however, new information (demand or supply problems) may modify local programs. By Fiscal Year 1983, we expect new Forest Plans will play an important role in program and funding distribution.

It is important to understand that the implementation of Forest Service plans will reflect the realities of the annual Federal budgeting and appropriation processes.

Forest Service Planning Is a Dynamic Process

Finally, it is important to remember that planning is a continuous process. Judgments are made on the basis of the best information available at the time plans are made. To keep the planning process viable and responsive, plans will be adjusted over time to reflect new and better data or changes in assumptions and people's needs.

II REGIONAL MANAGEMENT DIRECTION

This chapter outlines the direction for the Northern Region National Forests and Grasslands, and displays the direction of State and Private Forestry and Research Programs. It describes the management standards and guidelines resulting from the Regional planning process, and the goals and objectives of the RPA Program, which are displayed as program outputs for each National Forest planning area.

MANAGEMENT STANDARDS AND GUIDELINES

Effective management of Forest Service programs requires the establishment of standards and guidelines for land and resource planning and management.

The standards and guidelines listed below resulted from the present Regional planning process. Some were developed to resolve Regional issues and concerns, while others address National Forest Management Act (NFMA) requirements, 36 CFR Section 219.10(d). For a fuller discussion of their development and environmental effects, see the Final Environmental Impact Statement.

Additional standards and guidelines for all resource programs are described in Forest Service Manuals (FSM), Handbooks (FSH), and 36 CFR Part 219.13.

Data definition and inventory standards are also contained in Forest Service Handbooks and Manuals. In addition, the Regional Forester or Forest Supervisors are authorized to establish appropriate data definitions and inventory standards not established by the existing Forest Service directive system. These data definitions and standards may be used as appropriate for Forest land and resource management planning and programs (36 CFR 219.5(d)).

RECREATION

Provide recreation opportunities and protect cultural resources for the American people through application of improved technology, cooperative planning and development of recreation and other resources as identified in Regional and Forest land and resource management plans and State forest resource plans.

1. Emphasize dispersed recreation to the extent practical while maintaining developed recreation capacity.

2. Upgrade developed site facilities. Reduce the maintenance and rehabilitation backlog by completing heavy maintenance and installing new facilities that do not increase recreation site capacity but do alleviate safety and sanitation problems (condition classes 3 and 7) by 1990. Eliminate or replace other existing facilities that are in poor condition or are not needed (condition classes 4, 5, 6, and 8) by 2005.

3. Emphasize developed and dispersed recreation opportunities close to cities and towns and near recreation destination centers or resort areas.

4. Develop and implement Forest information service plans to (1) increase public understanding of Forest Service management activities, (2) increase public awareness of goods, services, and opportunities available to them, and (3) encourage less energy consumptive recreation activities.

5. Identify and complete the modifications needed to make recreation sites accessible to the elderly, handicapped, and other disadvantaged groups by 2000.

6. Increase developed site capacity only in locations where use presently exceeds capacity or will exceed capacity by 1990.

WILDERNESS FURTHER PLANNING AREAS

Secure the benefits of an enduring resource of wilderness by assuring that suitable, needed, and available National Forest System Lands will be designated for preservation and protection in their natural condition for the use and enjoyment of the American people. Manage the wilderness resource to leave it unimpaired for future use and enjoyment, preserve wilderness character and to provide scientific and educational information and activities regarding these ecosystems and their use.

The Northern Region's RPA objectives for wilderness have not been distributed to the National Forests. These will be assessed Regionally during the Forest planning process. However, wilderness further planning areas identified through the RARE II process will be included in the planning process. Table II-1 indicates which National Forests will address the further planning areas in their Forest Plans. RARE II decision criteria as shown on page 23 and 24 of the RARE II Final Environmental Impact Statement, January 1979, will be used to evaluate these areas in the Forest Plan. See chapter IV, Summary of the Analysis of the Management Situation, for an overview of existing and endorsed wilderness in the Northern Region.

TABLE II-1.--RARE II Further Planning Areas and Legislated Study Areas.

Regional Analysis Area and National Forest Plan	Rare II area a/ (name and number)	Net acreage
North Idaho		
Idaho Panhandle	Selkirks	44,295
Western Montana		
Bitterroot	Blue Joint (A1-941)	61,400
Kootenai	Ten Lakes (01-683)	33,885
Central and Eastern Montana		
Beaverhead	Italian Peak (11-945)	12,996
	Mt. Jefferson (01-962)	4,600
Deerlodge	Dolus Lake (01-429)	9,100
	Flint Range (01-428)	52,220
	Middle Mtn. Tobacco Roots (B1-013)	36,640
	Sapphires (01-421)	98,815
Lewis & Clark	Bear-Marshall-Scapegoat Swan (A1-485)	14,250
	Deep Creek (H, P, 1485)	27,588
	Big Snowies (A, B, S1-739)	95,861
	Middle Fork Judith (01-734)	91,000
Gallatin	Hyalite (G, H, 1-548)	103,850
Regional Total		686,500

a/ The following further planning areas were previously addressed in individual projects as Congressionally mandated wilderness studies. These areas included: Madison or Taylor-Hilgard (J, R1-549 and E, N, S1-549), 325,842 acres; Elkhorn (A, E1620), 84,980 acres; Mt. Henry (01-666), 20,000 acres; and West Pioneer (01-006), 147,992 acres.

WILDLIFE AND FISH

Provide productive wildlife and fish habitats with special emphasis on threatened and endangered species through the use of improved technology and management indicator species consistent with land and resource management plans and objectives and in cooperation with affected Federal and State agencies.

1. Evaluate National Forest capability to provide habitat for future big game and anadromous and cold water fish population levels. See appendix B.

2. Determine the impacts of managing at various population levels on other National Forest uses.

3. Habitat improvements for big game should not be planned for areas where potential major adverse impacts to private lands are likely to occur.

4. Evaluate both the National Forest capability to maintain or improve threatened and endangered species habitat to meet population recovery goals and the need to prevent sensitive species from becoming threatened or endangered. Evaluate current essential threatened and endangered habitat recommendations and recommend changes as appropriate. See appendix B.

5. Utilize appropriate management indicator species to analyze Forests' ability to maintain viable populations of fish and wildlife species.

6. In development of Forest Plans, develop management prescriptions and standards and guidelines to guide habitat management practices and other uses that need to be coordinated with wildlife habitat capability.

RANGE

Provide for livestock grazing and widlife forage on forest and rangelands commensurate with land and resource management plan goals and objectives. Through use of improved technology, maintain or increase forage production consistent with the market value of forage. Improve social and economic well being of family farmers and ranchers and low income groups through protecting local community stability.

In development of Forest Plans, develop management prescriptions and standards and guidelines for allocation of forage to wildlife, domestic livestock, and other uses as well as for protection measures needed to maintain environmental quality.

TIMBER

Enhance the growth of forests and utilization of wood products to help meet National wood fiber needs and allow the United States to become a net exporter of wood fiber through application of improved technology, timely forest management practices consistent with land and resource management plan goals and objectives, efficient processing and utilization techniques, and cooperative planning and development.

1. Utilization Standards and Guidelines. The utilization standards and guidelines listed below will be used for timber sale contracts and to determine harvest levels.

LIVE TREES	Minimum d.b.h.	Minimum piece size	Minimum top d.i.b.	Percent sound
Lodgepole pine	6.0 inches	8 feet	4.6 inches	25
All other species	7.0 inches	8 feet	4.6 inches	25

DEAD TREES	Minimum d.b.h.	Minimum piece size	Minimum top d.i.b.	Percent sound
Lodgepole pine	8 inches	16 feet	7 inches	33 1/3
White pine	8 inches	8 feet	7 inches	33 1/3

UTILITY TREES FOR PULP	Minimum piece size	Minimum top d.i.b.	Percent sound
Any species	12 feet	5.6 inches	50% pulpable

Dead Trees

SPECIES	Minimum d.b.h.	Minimum piece size	Minimum top d.i.b.	Percent sound
Lodgepole pine	8 inches	16 feet	7 inches	33 1/3
White Pine	8 inches	10 feet	7 inches	33 1/3
All Other Species	8 inches	8 feet	5.6 inches	33 1/3

To clarify management direction, the utilization standards listed in the Regional Guide are to be used in the Forest plans to determine timber yields. The standards will be incorporated in timber sale contracts if and when market conditions, logging conditions, and local capability are such that products of this size are economically useable. In the event that these products do not become economically marketable within the 10-year planning period the Forest plans will be re-evaluated appropriately.

2. Management Intensity. For the purposes of Forest land and resource planning, forest fertilization and tree improvement management practices will not be used since enough information on these management practices is not available. Forest stand stocking control and investments needed for intensive timber stand culture will be included. The appropriate management intensity costs will be identified for the selected management practices and direction included in the Forest Plan.

3. Mean Annual Increment. The unit of measure used to express mean annual increment is cubic feet.

4. "Suitability for Timber Management. Lands suitable for timber production shall be determined as set forth in 36 CFR 219.14."

5. Tree Openings

Size. Size of tree openings created by even-aged silviculture will normally be 40 acres or less. Creation of larger openings will require 60-day public review and Regional Forester approval, with the following exceptions:

1. Where natural catastrophic events such as fire, windstorms, or insect and disease attacks have occurred, 40 acres may be exceeded without 60-day public review and Regional Forester approval, provided that the public is notified in advance and the environmental analysis supports the decision.

2. Where any one of the following conditions exists, the size of opening may reach up to 60 acres without 60-day public review and Regional Forester approval, provided that the public is notified in advance and the environmental analysis supports the decision:

A. When larger created openings will reduce the disturbance to soil, water, fish, or riparian resources, and residual vegetation by: (1) allowing economically feasible logging systems that reduce landing and road construction; or (2) locating roads away from unstable soils; and (3) reducing soil and vegetation disturbance from dragging logs.

B. Where groups of dwarf mistletoe or root rot disease infected trees need to be incorporated into the created opening to avoid infection of susceptible conifer reproduction and their inclusion cannot be achieved by centering the created opening over the area of infection.

C. Where visual quality objectives require shaping and blending of openings to fit landform.

D. Where larger units are needed to achieve silviculture objectives in existing areas of regeneration cutting by the shelterwood method and where destruction of the newly created stand of reproduction would occur as a result of delayed removal of shelter trees. This exception applies only to existing shelterwood units and shelterwood units under contract prior to approval of the Forest Plan.

Dispersal. The objective is to disperse openings so that adjacent stands will represent at least three size classes. These classes will be defined based on the following size classes and average stand diameter (Forest Service, 1980a; FSM 2409.14).

Nonstocked-seedlings (0.0.9" diameter)
Sapling (1-4.9" diameter);
Pole (5-8.9" diameter); and
Sawtimber (9.0" or larger).

Duration of Opening. Where even-aged management is used to achieve Forest plan objectives, openings will be created through cutting practices. For management purposes, these cut areas will no longer be considered openings when both vegetation and watershed conditions meet management objectives established for the management area. The vegetative conditions required will very both in relation to the mangement objectives for an area, as well as individual site conditions, i.e., biological types, physical conditions and climate.

As a minimum, a cutover area will be considered an opening until a new forest stand is established and certified as stocked.

The vegetative conditions required will also be guided by the management area objectives in Forest plans. The factors typically considered include:

- Visual resource: an opening is no longer an opening when vegetative conditions reach the point where harvest of adjacent timber can occur and the combined area can still meet the visual quality management objectives.

- Big game cover; an opening is no longer an opening when vegetative conditions meet cover requirements that achieve wildlife management objectives.

- Watershed conditions; an opening is no longer an opening when vegetative conditions reach the point where harvest of additional timber can occur and the combined area can still meet the watershed management objectives.

The watershed conditions are considered as a part of dispersal and scheduling analysis completed during implementation of the Forest plan. Additional factors typically include:

- Soil stability
- Stream channel condition
- Other variations set forth in individual Forest plans (36 CFR 219.27(d)(1)).

6. Appropriate Silvicultural Systems. Use standards that apply either even- or uneven-aged silvicultural systems based on criteria that best meet land and resource management objectives defined in the Forest plan. At a minimum, these would be:

Standards for all silvicultural systems:

A. The system must develop stand conditions required for meeting allocated resource management objectives.

Stand conditions can be described by stand density, stand structure, tree species composition, and growth rates throughout the life of the stand. Table 11-2 lists preferred silvicultural systems to achieve certain desired forest characteristics.

TABLE 11-2.--Preferred silvicultural system to achieve desired forest character.

Desired character a/	Preferred silvicultural system b/	
	Even-aged	Uneven-aged
Continuous site occupancy with trees	Shelterwood	Single tree selection
Mosaic of forest and opening	Clearcut, seed tree	0
Two-storied stand	Clearcut, seed tree, shelterwood	0
Maximum species diversity	Shelterwood	Group selection
Old growth character	Shelterwood	Single tree and group selection
Closed canopy	Clearcut seed tree, shelterwood	0

a/ USDA-Forest Service, 1977a, 1977b, 1980c.
b/ Daniels et al., 1979; Smith, 1962.

B. The system must permit enough control of competing vegetation to allow establishment of an adequate number of trees growing at acceptable rates.

Each site can present special regeneration problems. However, selection of a silvicultural system can be guided by the character of competing vegetation likely to occur and the topographic aspect of the area. General guidance for the more critical regeneration problems in the Northern Region is summarized in table II-3.

TABLE II-3.--Selection of silvicultural system based on common regeneration problems in R-1.

Competing vegetation a/	Key habitat type b/	Critical aspect c/	Preferred system	
			Even-aged	Uneven-aged
Ceanothus	GF series	S and W	Shelterwood	All
High-elevation brush	AF series	All	Shelterwood	All
Low-elevation brush	GF/Ced/Hem series	N and E	Clearcut Seed tree	0
Low-elevation brush	GF/Ced/Hem and DF series	S and W w/slopes over 30%	Shelterwood Seed tree	All
Low-elevation brush	(same as above)	S and W w/slopes less than 30%	Clearcut Seed tree	0
Grasses (warm sites)	PP and DF series	S and W	Shelterwood	All
Grasses (cool sites)	DF and AF series	All	Shelterwood	Group selection

a/ Haig et al., 1941; Ryker, 1975; Schmidt et al., 1976.
b/ Daubenmire and Daubenmire, 1968.
c/ Haig et al., 1941.

C. The system must promote stand structure, composition, and conditions that minimize damage from pest organisms, animals, wind, and fire.

> Protection of the stand against injuries should be as much a part of applied silviculture as harvesting, regeneration, and tending the crop . . . Forest protection often involves modification of silvicultural techniques in addition to more spectacular direct measures.
>
> Silvicultural systems will be the keystone in any long range preventive integrated pest management system. The wrong system can lead to or perpetuate pest problems, the right one can ameliorate them. (Stark, 1979)

Integrated pest management strategies are derived from an understanding of the ecological relationships in the pest host system. Highly susceptible stand characteristics and workable silvicultural systems for major damaging agents are shown in the following table. In general, silvicultural systems which encourage species diversity, growth and vigor, seral communities, diversity and between stand size class are preferred (table II-4).

Table II-5 displays how fuel treatment may be used to help choose a silvicultural system to minimize fire hazard and damage.

TABLE II-4.--Preferred silvicultural systems for major damaging organisms.

Damage agent	Applicable Forest survey cover type	Highly susceptible stand characteristics	Preferred silv. systems f/
Western spruce budworm a/	Douglas-fir Spruce-subalpine fir	Pure stands of tolerant tree species, over-stocked, mature, multi-storied stands	CC, ST, SHEL
Douglas-fir tussock moth b/	Douglas-fir (west) Grand fir (especially on dry sites)	Stands with high proportion of grand fir, overstocked, greater than 50 years old, multistoried	CC, ST, SHEL
Mountain pine beetle c/	Lodgepole pine (especially at lower elevations)	LPP trees greater than 8" d.b.h. and older than 80 yrs. in pure stands	CC, SHEL
	Ponderosa pine	Pure even-aged PP, 50-100 yrs., 8-12" d.b.h; greater than 150 sq. ft. per acre, slow growing, live crown ratios less than 1/3	CC, ST, SHEL, SEL
Other bark beetles d/	All	Pure or mixed host tree species in old growth and stressed stands	CC, ST, SHEL SEL
Dwarf mistletoes e/	Douglas-fir Western white pine Western larch Lodgepole pine	Host tree species, multistoried or pure stands, poor vigor	CC
Root diseases	Douglas-fir Western white pine Grand fir	Pure host tree species	CC
White pine blister rust	Western white pine (especially moist stream bottoms)	Pure or mixed host tree species; Ribes undergrowth	CC, ST, SHEL,

a/ Fauss and Pierce, 1969; Williams et al., 1971; Johnson and Denton, 1975.

b/ Stoszek and Mika, 1978.

c/ Amman et al., 1977; Sartwell, 1971; Sartwell and Dolph, 1976; Sartwell and Stevens, 1975.

d/ Furniss and Carolin, 1977.

e/ Parmeter, 1978.

f/ CC = clearcut, ST = seed tree; SHEL = shelterwood; SEL = selective cut.

TABLE II-5.--Fuel treatment choices for various silvicultural systems.

Method of fuel treatment a/	Forest conditions necessary for treatment b/	Preferred silvicultural systems	
		Even-aged	Uneven-aged
Underburning c/	Residual Douglas-fir or western larch over 50 years old or ponderosa pine over 20 years old	Shelterwood Seed tree	0
Broadcast burn	All stands - all slopes	Clearcut	0
Jackpot burn	Continuous forest cover with a high proportion of fire resistant species	0	Group and single tree selection
Machine pile and burn	Stands on less than 35 percent slopes	All	All
Hand pile and burn	All stands	All	All
Lopping	All stands	All	All
Chopping, trampling	Stands on less than 35 percent slopes	All	Group selection
YUM	All	All	All

a/ Puckett et al., 1979.
b/ Davis et al., 1980; Wright, 1978.
c/ Norum, 1977.

D. The system must be compatible with acceptable logging methods so that future stands can be cultured and harvested.

To be acceptable, a logging method must be able to be used to harvest a stand without excessive damage to the desired residual vegetation or other resources. 3/ A balance must be achieved between physical constraints, 4/ the environmental impacts, 5/ and costs of roading. 6/ Because of the wide variation of topography, vegetation, and land uses in the Region, logging systems and transportation plans must be designed to meet the cultural constraints of stand tending, the physical spacing of roads, unit shape, topography, and other resource needs.

Table 11-6 lists logging methods which are compatible with the even-aged and uneven-aged silvicultural system. In general, costs increase with the silvicultural systems from left to right in this table as the number of residual trees increases. Costs also rise as the size of the residual trees decreases because of the added difficulty of protecting the leave stand. Logging costs per unit volume increase reading down the table. Road construction costs must be added to logging costs, with the physical limitation of the logging method controlling road spacing.

3/ USDA-Forest Service 1973a, 1980a, and 1980b; U.S. Environmental Protection Agency, 1976.

4/ Conway, 1976; Oregon State University Forest Research Lab, 1966.

5/ Webb, 1973; Wooldridge, 1960.

6/ USDA-Forest Service, 1973a, 1980a.

TABLE II-6.--Compatibility of logging systems and silvicultural systems in R-1.

Logging method	Normal operating constraints	Preferred silvicultural system: Clearcut	Seed tree	Group selection	Shelter-wood	Single tree selection
GROUNDLEAD g/						
Rubber tired skidder	On stable soil, downhill<35%; Uphill<10%, EYD to 1700'	A	A	A	A l/	A l/
Tractor a/	On stable soil, downhill<45%; Uphill 15%, EYD to 1000'	A	A	A	A l/	A l/
Horse b/	Downhill only, on slope <30%, EYD to 500'	A	A	A	A	A
Jammer c/	On stable soil, uphill only, EYD to 450'	A	A	A	N	N
Highlead d/	Downhill EYD to 400'; uphill EYD to 950'	A	N	N	N	N
SKYLINE e/ h/						
Live skyline	Minimum deflection 8%, uphill only, EYD to 750'	A	A	A	A	A
Small standing skyline	Minimum deflection 8%, downhill hill EYD to 500; uphill EYD 450' to 1250'	A j/	Aj/	A	A	A
Standing skyline	Minimum deflection 7%, downhill EYD to 700'; uphill EYD 500' to 2000'	A	A	A	A	Al/
Running skyline	Minimum deflection 5%, EYD 300' to 1000'	A	A	A	A	Al/
Large standing skyline	Minimum deflection 10%, EYD 2000' to 4500'	A	A	N	Ak/	N
AERIAL						
Balloon	Not yet feasible in Northern Region's altitudes & latitudes	-	-	-	-	-
Helicopter f/	High costs confine R-1 to high value species not accessible by other logging methods; constraints, downhill 1500' vertical, uphill 800' vertical, EYD to 6000'	A	A	A	Al/	N

NOTE: A-acceptable; N-nonacceptable; EYD-external yarding distance.

a/ USDA-Forest Service, 1980b; Aulerick et al., 1974; Conway, 1976.
b/ Oregon State University Forest Research Lab, 1966.
c/ USDA-Forest Service, 1980a.
d/ Conway, 1976; Ruth 1967.
e/ USDA-Forest Service, 1973a, 1980a; Conway, 1976; Ruth, 1967.
f/ USDA-Forest Service, 1973a.
g/ For one-half or more of the external yarding distance, turns of logs move parallel to and in contact with the ground.
h/ Except for lateral yarding, turns of logs are brought to the landing with the leading end of the logs free of the ground.
l/ Only when one-third or more of the merchantable trees are harvested from fully stocked stands.
j/ Only when the harvested stand d.b.h. averages 12" or less.
k/ Only when one-half or more of the merchantable trees are harvested from fully stocked stands.

Additional standards for clearcutting:

A. Clearcutting should be used only where it is the optimum system. Optimum is considered to be the best system available to meet the objectives and requirements of the land and resource management plan."

Additional standards for uneven-aged silviculture:

A. Where timber production and harvesting are to be scheduled on capable and suitable lands, uneven-aged silviculture can be practiced provided it satisfies the following conditions:

(1) The following factors must be specified and implemented: optimal sustainable diameter distribution, cutting cycle length, optimal species mix, conversion strategy, and conversion period length, and scheduling of treatments and entry dates for the total area of Forest involved (Hann and Bare, 1979).

(2) Stands to be treated should generally be at least 5 acres or more in size for recognition of planned and accomplished work in the Regional Stand Record System.

(3) Each treatment must be capable of producing usable products through time.

(4) The affected ecosystem must be able to withstand frequent harvest activities. The following must be considered: fuel loadings in the stand to be managed in conjunction with fuels in the surrounding area; soil compaction and erosion potential of the site; susceptibility of feature tree species to frequent logging damage and resulting stem decay.

(5) Tree species indigenous to the area must be compatible with stand structures that will occur in uneven-aged stands.

B. Where timber production and harvesting are not an objective of management, uneven-aged silviculture may be practiced on unsuitable lands to meet other resource management objectives provided it satisfies the following conditions:

(1) Stands to be treated should generally be at least 5 acres or more in size for recognition of planned and accomplished work in the Regional Stand Record System.

(2) The affected ecosystem must be able to withstand frequent harvest activities. The following must be considered: fuel loadings in the stand must be managed in conjunction with fuels in the surrounding area; soil compaction and erosion potential of the site; and susceptibility of feature tree species to frequent logging damage and resulting stem decay.

(3) Tree species indigenous to the area must be compatible with stand structures that will occur in uneven-aged stands.

7. Firewood Availability

a. Where feasible, make firewood more accessible through revised slash disposal and other forest management practices.

b. Provide a place for woodcutters to obtain permits on weekends and after normal working hours on weekdays.

c. Provide clearly illustrated maps showing woodcutting areas, well-signed roads to those areas, and plenty of signs showing the boundaries of woodcutting areas. This should provide better control of woodcutters and help keep them from trespassing on other land.

d. With the maps and permits, include appropriate information on the value of dead and standing trees to wildlife, techniques for safe use of wood gathering equipment and vehicles, and methods which minimize visual and physical damage to the wood gathering site.

e. Coordinate with the County Extension Agent and with State and/or local air quality officials to develop and provide information to the public on the harvesting and burning of wood and to determine ways of reducing or mitigating the environmental effect of wood burning.

f. Give maximum protection to water quality by providing only that access which adequately protects wetlands, flood plains, and other sensitive watershed areas.

g. Coordinate National Forest firewood policies and practices with affected intermingled or adjacent private landowners, Indian tribes, State, and other Federal Agencies.

MINERALS

Administer and develop mineral resources using improved technology on National Forest System lands to the fullest extent possible, consistent with adequate environmental protection and other land and resource management plan goals and objectives.

1. Process backlog oil and gas lease applications by October 1, 1981. Thereafter, process other leasing applications within 60 days if they are covered by an existing Unit or Forest Plan or environmental analysis; within 1 year if they are not covered by previous plans or analyses.

2. Provide for reasonable exploration and development privileges while insuring adequate administration of the leases for the protection and use of other resources.

LANDS

Develop land and resource management plans and assure that National Forest System land ownership adjustments, special land use administration, rights-of-way acquisition, and improved technology are used to meet Regional and Forest plan objectives and goals.

1. Corporate Landownership Adjustment

The National Forest System land pattern intermingled with large, corporate private landowners in a checkerboard relationship does not constitute reason for ownership adjustment. However, ownership adjustment may occur when it is determined a specific ownership change is needed in response to major public issues, management concerns, or resource management goals consistent with integrated land management plans. Forest plans will provide direction where checkerboard ownership is an issue and/or impediment in accomplishing multiple use objectives.

a. In classified wildernesses, the objective is to acquire all privately owned lands and not to dispose of National Forest System lands.

b. In congressionally designated areas (other than wilderness) or in administratively designated areas, the objective is to achieve the ownership pattern necessary to preserve or enhance the values which dictated the classification in order to follow the management plan for the area.

c. In other inventoried roadless areas, acquisition or disposal of lands will depend on the analyses associated with Forest Plans.

d. The pattern of ownership (needed acquisition or disposal) to achieve goals for (1) commerical recreation developments, (2) recreation composites, and (3) municipal watersheds will depend on the analyses in Forest Plans.

e. The pattern of ownership for other wild lands may change as a result of analyses in Forest Plans. However, private lands should not be acquired simply to: improve Forest Service management efficiency, relieve private landowners of lands having low commodity production potential, or improve a private landowner's management efficiency.

National Forest System land intermingled with large corporate lands in a checkerboard pattern will not be disposed of if analysis shows that consolidation would result in:

a. Substantial additional costs to local governments for social or public services.

b. A significant adverse effect on the use or protection of adjacent public land.

c. A significant increase in the cost of planned public projects.

d. A significant adverse social or economic effect on the local community.

e. A significant loss of capital investments by the United States.

f. Adverse effects on the habitat of federally listed threatened and endangered species.

g. A significant loss of total National Forest System acreage classified as available and capable of timber production.

h. Areas recomended or designated for wilderness being classified for disposal in the proposal.

2. Transportation Corridors

The following standards and guidelines deal with established corridors and adjacent land and with potential corridors.

a. Guidelines for management of established corridors and National Forest System lands immediately adjacent to the corridors: (1) establish direction through the Forest Plan for the management of right-of-way corridors on National Forest lands; (2) use the interagency planning process to determine corridor capacity and other corridor management policies for existing and projected rights-of-way; (3) give preference for approval of new facilities to existing rights-of-way which have surplus capacity.

b. Guidelines for planning potential corridors: (1) where possible, evaluate requests from industry or utilities for new corridors on an interagency basis; and (2) evaluate through the Forest Plan potential effect of management direction on identified potential corridors (figure II-1 shows the potential "windows" on National Forest land through which future corridors may have to pass).

WATER

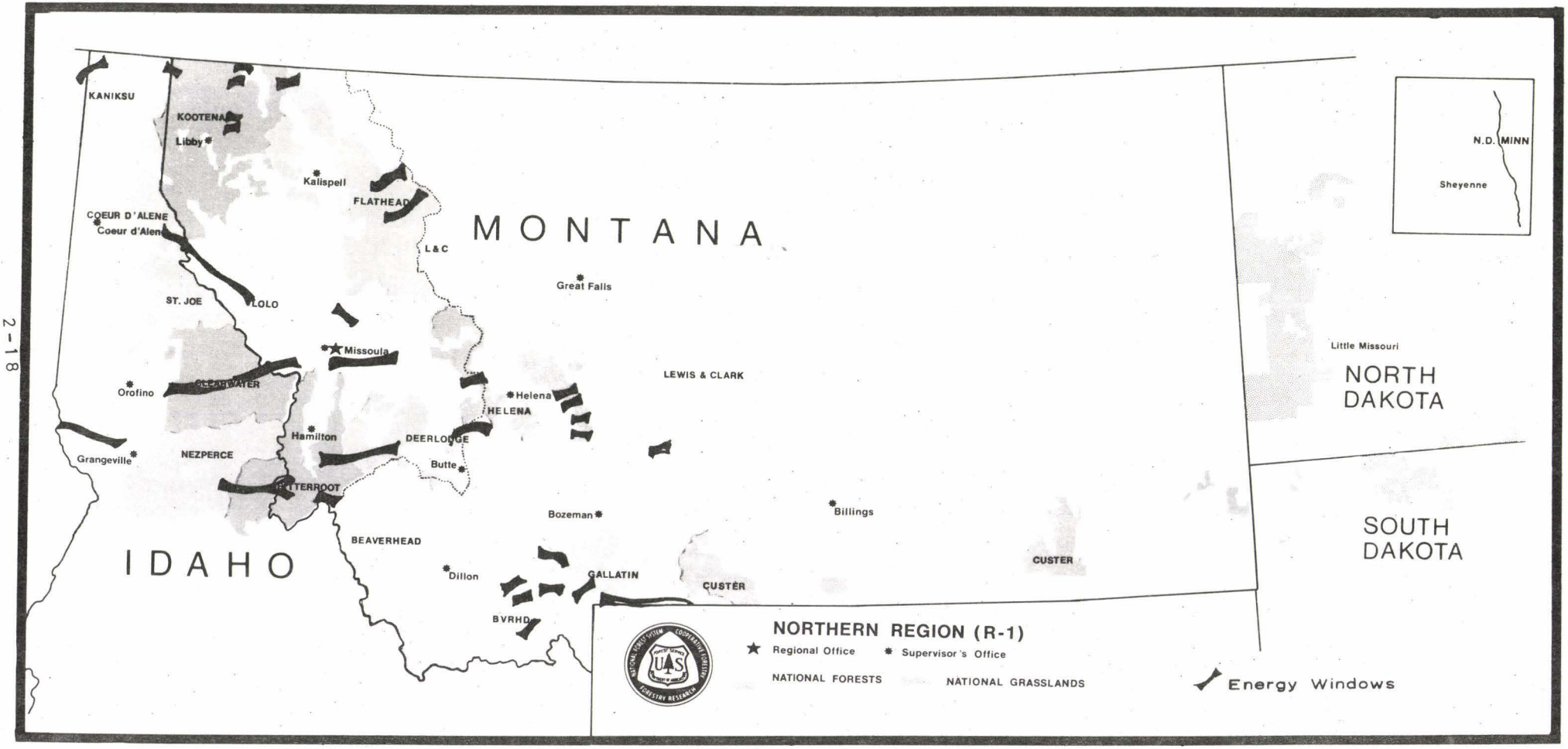
Protect, conserve, and enhance water resources consistent with other land and resource management plan objectives through the use of improved technology, cooperative planning and development, and application of Best Management Practices.

FACILITIES

Provide and maintain capital improvements such as buildings, roads, fences, bridges, dams, and airfields to meet Regional and Forest Plan goals and objectives.

Potential Long Range Energy Windows

Figure II-1



Reference: Draft - PACIFIC NORTHWEST LONG RANGE EAST-WEST ENERGY CORRIDOR STUDY

PROTECTION

1. Fire Management

Provide well planned and executed fire protection and fire use programs and advice to cooperators that is commensurate with land and resource management plan goals and objectives and employs improved technology that is efficient and environmentally acceptable.

2. Insect and Disease

Develop, practice, and encourage the use of integrated pest managmeent methods, systems, and strategies to provide protection of forest and range resources with the least hazard to people, their possessions, wildlife and fish, and the environment to meet Regional and Forest land and resource management and State Forest Resource Plan objectives.

SOILS

Protect, conserve, and maintain soil productivity of forest and rangelands through improved technology and its application to needs identified in National Forest land and resource management plans.

HUMAN AND COMMUNITY DEVELOPMENT

Help people and communities help themselves by providing the opportunity for sponsored and hosted programs to participate in National Forest and Grasslands resource programs to accomplish land and resource management objectives, environmental education, and meet job training and employment needs.

AIR QUALITY

Use a coordinated approach through cooperative agreements with the States to manage smoke emissions into State-identified sensitive areas.

RESEARCH NATURAL AREAS

In each Regional analysis area, establish sufficient research natural areas so that at least two or three examples of each major forest habitat type and one example of each minor forest habitat type that occur in each analysis area are represented. Establish one example of each shrubland and grassland habitat type and one example of each aquatic ecosystem type. National Forest assignments are listed in tables II-7 to II-12.
The abbreviations used for the habitat types and names of the RNA's are explained in appendix A.

The process for identifying and recommending Research Natural Areas follows:

Step 1. Review existing natural areas established by Federal, State, and local agencies to see if sufficient examples of important botanic, aquatic, and geologic types are protected. (Sufficient examples will be defined as the number of areas of each type needed within a Regional analysis area. See above.) If sufficient natural areas are not provided move to step 2.

Step 2. Review proposed natural areas of Federal, State, and local agencies to see if needed habitat types are already being addressed. If sufficient natural areas are not being addressed, move to step 3.

Step 3. Review opportunities on National Forest land for natural areas that would meet appropriate targets within the Regional Analysis Area. Review tradeoffs and select candidates. This review should include research natural areas already designated. In the case of nationally designated wilderness areas, wild and scenic rivers, and national recreation areas, if a natural area type can be found and is readily accessible, it will be considered an opportunity.

Step 4. Review opportunities identified in step 3 and, through the Forest Plan, recognize candidates for inclusion into the research natural area system.

Step 5. Once the above steps are completed and specific areas have been considered for inclusion in the research natural area system, an establishment report must be prepared for each area. The format for the report is described in FSM 4063. The Region's Research Natural Area Committee will give appropriate assistance in preparing the reports and will be responsible for obtaining reviews and, eventually, the signature of the Chief. With the Chief's signature, the area becomes an established research natural area and will be managed under direction given in FSM 4063 and FSM 2360.

Research Natural Area Assignments

Table II-7

*ON IDAHO PORTION OF FOREST

Habitat Type Code	Forest Habitat Type	NORTHERN IDAHO						WESTERN MONTANA					CENTRAL / EASTERN MT.							NORTH & SOUTH DAKOTA	
			Idaho Panhandle																		
		Occurrence	Kaniksu	Coeur 'd Alene	St. Joe	Clearwater	Nezperce	Occurrence	Kootenai	Flathead	Lolo	Bitterroot	Occurrence	Deerlodge	Lewis & Clark	Helena	Beaverhead	Gallatin	Custer	Occurrence	Custer
010	SCREE							M			○	*SANA	M		○	○					
040	PIFL/AGSP												m								
050	PIFL/FEID												m								
070	PIFL/JUCO												m								
130	PIPO/AGSP	m					LIK	m				○	m						○		
140	PIPO/FEID	m					LIK	m				○	m		PAH						
160	PIPO/PUTR							m			○										
170	PIPO/SYAL	m					LIK	m			○		m						○		
180	PIPO/PRVI												m						○		
210	PSME/AGSP							m				○	m			○					
220	PSME/FEID												M		PAH				LON		
230	PSME/FESC							m		○			m			○					
250	PSME/VACA							M	○		○										
260	PSME/PHMA	M	BIK		BUK	AGS LOA	NOK LIK OHK	M		COM	PLK	BOK	m						LON		
280	PSME/VAGL							M			PYK	BOK LONA	m			○					
290	PSME/LIBO							M			○	LONA	M	○	PAH						
310	PSME/SYAL	m					LIK	M		○		LONA	M		PAH		CLE				
320	PSME/CARU	m					LIK	M	○			LONA	M			○	CLE				
330	PSME/CAGE							m			SHG		m						LON		
340	PSME/SPBE							m			○		m		○						
350	PSME/ARUV												m		○						
360	PSME/JUCO												M	○	PAH						
370	PSME/ARCO												M	○			○				
410	PICEA/EQAR							m		○					○						
420	PICEA/CLUN							M	○	○											
430	PICEA/PHMA												m					○			
440	PICEA/GATR							m			○		M	○				○			
450	PICEA/VACA							m		○											
460	PICEA/SEST												m		○						
470	PICEA/LIBO												M				CLE	○			
480	PICEA/SMST												m					○			

M = Major representative in zone
m = Minor representative in zone
○ Targeted Need

xyz = abbreviation of established RNA
xyz = abbreviation of recommended RNA

Present

Not Present

Research Natural Area Assignments

Table II-8
*ON IDAHO PORTION OF FOREST

Habitat Type Code	Forest Habitat Type	NORTHERN IDAHO								WESTERN MONTANA						CENTRAL / EASTERN MT.							NORTH & SOUTH DAKOTA	
			Idaho Panhandle																					
		Occurrence	Kaniksu	Coeur 'd Alene	St. Joe	Clearwater	Nezperce	Occurrence	Kootenai	Flathead	Lolo	Bitterroot	Occurrence	Deerlodge	Lewis & Clark	Helena	Beaverhead	Gallatin	Custer	Occurrence	Custer
510	ABGR /XETE	m					OHK	m			BAE													
511	ABGR /COOC	m																						
516	ABGR /ASCA	m																						
520	ABGR /CLUN	M		UPKA		AQS LOA BUK	ONE LTR NOK	M		SWQ														
590	ABGR /LIBO	m						m																
530	THPL /CLUN	M			UPK	AQS LOA BUK		M	LOK	SWQ		LONA												
540	THPL /ATFI	m	TEK HUK		UPK	AQS LOA																		
545	THPL /ASCA	m																						
550	THPL /OPHO	m	HUK	UPKA		AQS		m	LOK															
560	THPL /ADPE	m				AQS LOA	OHK																	
570	TSHE /CLUN	M	POSA TAK CAR KAH HUK BOR UPR BIR	MOK				M	LOK															
605	ABLA/CABI	m					MOKA																	
610	ABLA/OPHO																							
620	ABLA /CLUN	M	HUK SMK	UPKA		SNS	OHK LTR	M		CON		BOK BIE												
630	ABLA /GATR							m					m											
635	ABLA /STAM	m																						
638	ABLA /COOC	m					MOKA																	
640	ABLA /VACA												m				BUL							
650	ABLA /CACA	m						m				*SANA	M			REN		WHE						
660	ABLA /LIBO							M					M											
670	ABLA /MEFE	M	CAK HUK SMK			SNS STS	QUE MOKA LTK NOK	M			CAE	BIE UPN	m			REN								
680	TSME/ MEFE	M		UPKA POK	THE	STS		m	ULK		BAE													
690	ABLA /XETE	M	CAK AUK SMK	UPKA		SNS STS	NOK	M			CAE PYK	BIE UPN	m			REN GRE								
710	TSME /XETE	M						m			BAE													
720	ABLA /VAGL												M											
730	ABLA /VASC							m				UPN	M			GRE		CLE BUL						
740	ABLA /ALSI												m											
750	ABLA /CARU												m											
770	ABLA /CLPS												m		PAH				LON					

M = Major representative in zone
m = Minor representative in zone
xyz = abbreviation of established RNA
xyz = abbreviation of recommended RNA
Targeted Need
Present
Not Present

Research Natural Area Assignments

Table II-9

ON IDAHO PORTION OF FOREST

Habitat Type Code	Forest Habitat Type	NORTHERN IDAHO						WESTERN MONTANA					CENTRAL / EASTERN MT.							NORTH & SOUTH DAKOTA	
			Idaho Panhandle																		
		Occurrence	Kaniksu	Coeur d' Alene	St. Joe	Clearwater	Nezperce	Occurrence	Kootenai	Flathead	Lolo	Bitterroot	Occurrence	Deerlodge	Lewis & Clark	Helena	Beaverhead	Gallatin	Custer	Occurrence	Custer
780	ABLA / ARCO												M		PAH		○				
790	ABLA / CAGE												m				○				
810	ABLA / RIMO												m						○		
820	ABLA-PIAL / VASC							m			○		M			REN		WHE			
830	ABLA / LUHI	M	ADK SAR					M			CAE SHB	SANA* SAE UPN	m	SAE		REN					
840	TSME / LUHI	m				○		m	○												
850	PIAL / ABLA	m						M				SANA* SOE JUHA BIE	M			REN					
860	LALY / ABLA	m									CAE	SANA* UPN SAB									
870	PIAL											SANA SAE	m	SAE		GRS					
920	PICO / VACA												m	○							
910	PICO / PUTR												m					○			
N/A	PIFL																				PIFL
	ASPEN POPULUS TREMULOIDES												m		○						
	COTTONWOOD (POPULUS SPP)	m		SPP				M	○		○		M	○				○			
	BUR OAK QUERCUS MACROCARPA												m						○		

M= Major representative in zone

m= Minor representative in zone

○ Targeted Need

xyz = abbreviation of established RNA

xyz = abbreviation of **recommended RNA**

Present

Not Present

Research Natural Area Assignments

Table II-10

TARGETS FOR NONFOREST TYPES	NORTHERN IDAHO						WESTERN MONTANA					CENTRAL / EASTERN MT.							NORTH & SOUTH DAKOTA	
		Idaho Panhandle																		
	Occurrence	Kaniksu	Coeur d' Alene	St. Joe	Clearwater	Nezperce	Occurrence	Kootenai	Flathead	Lolo	Bitterroot	Occurrence	Deerlodge	Lewis & Clark	Helena	Beaverhead	Gallatin	Custer	Occurrence	Custer
ALPINE TYPES	M	○			○		M		○			M	○		REN			○		
STCO/BOGR												M			○					
AGSP/BOGR												M					○			
AGSP/AGSM												M						○		
AGSP/POSA	m					LIK	m		○			m	○							
AGSP/OPPO	m					LIK														
FESC/AGSP						○	M		○			M			GRE					
FESC/FEID							M				○	M			GRE					
FEID/AGSM												m						○		
FEID/CAHO	m					LIK														
FEID/AGSP	m					LIK	M				○	M	○							
FEID/AGCA												M				CLE				
FEID/CAFI												m				○				
FEID/STRI												m					○			
FEID/DECA							m			○		m				○				
DECA/CAREX							m			○		m		○						
FEVI	m	CAK					m				SANA									
FEID/SYAL	m					○														
FESC/SYAL	m				○															
ALSI/SHRUB	m				AQS	ONK														
ARAR/AGSP												m					○			
ARAR/FEID												m				○				
ARTR/AGSP												m				○				
ARTR/FESC							m		○			m			○					
ARTR/FEID												M				CLE				
ARTRI/FEID												m				○				
POFR/FESC												m								
POFR/FEID												m		○						
PUTR/AGSP							M			○		m		○						
PUTR/FESC							m		○											

M= Major representative in zone

m= Minor representative in zone

○ Targeted Need

xyz = abbreviation of established RNA

xyz = abbreviation of recommended RNA

Present

Not Present

Research Natural Area Assignments

Table II-11

TARGETS FOR NONFOREST TYPES	NORTHERN IDAHO						WESTERN MONTANA					CENTRAL/EASTERN MT.							NORTH & SOUTH DAKOTA	
		Idaho Panhandle																		
	Occurrance	Kaniksu	Coeur d' Alene	St. Joe	Clearwater	Nezperce	Occurrence	Kootenai	Flathead	Lolo	Bitterroot	Occurrence	Deerlodge	Lewis & Clark	Helena	Beaverhead	Gallatin	Custer	Occurrence	Custer
PUTR/FEID							m					m	○							
CELE/AGSP	m					○						m				○				
RHTR/AGSP												m			○					
RHTR/FEID												m			○					
SAVE/AGSM												m		○						
SAVE/ELCI												m				○				

M= Major representative in zone xyz = abbreviation of established RNA

m= Minor representative in zone xyz = abbreviation of recommended RNA

○ Targeted Need Present Not Present

Research Natural Area Aquatic Type Assignments

Table 11-12

*ON IDAHO PORTION OF FOREST

AQUATIC TYPE AND SUBTYPES	NORTHERN IDAHO					WESTERN MONTANA				CENTRAL / EASTERN MT.						NORTH & SOUTH DAKOTA
	Idaho Panhandle															
	Kaniksu	Coeur d' Alene	St. Joe	Clearwater	Nezperce	Kootenai	Flathead	Lolo	Bitterroot	Deerlodge	Lewis & Clark	Helena	Beaverhead	Gallatin	Custer	Custer
Type I Streams	BIK SMK HUK BIK SMK POS BUK POS HUK CAR TEK TBK CAR	UPKA MOK UPKA MOR	UPK DPK BUK	SNS AQS LOA LOA AQS SNS	OHK OHK MOK	ULK	SWR COM	PLK PLK	*SANA BIK BOK *SANA BOK LONA LONA UPN SAE	SAB	PAH	REN REN	CLE CLE	WHG	LON	
Type II Streams																
Type III Streams	SMR HUK	UPKA MOK			OHK NOS											
Waterfalls		URKA			OHK LIK											
Beaver Ponds	BIK SUG	UPKA			OHK		SNR									
Cold Springs	POS CAR TEK	UPKA	UPK	LOA AQS	OHK			PLK	*JANA LONA		PAH		BUL			
Special Faunal Populations	BIK															
Rivers	UPR	SPK		AQS LOA	LIK		SWR									
Permanent Ponds	BIK POSA UPR	POK	BUK	STS	LIK											
Temporary Ponds	TEK															
Low Production Potential Lk.	HUK				LIK	ULK			SAE UPN							
Average Prod. Potential Lk.			THE	STS												
High Pro . Potential Lk .																
Lakes With Fish				STS												
Lakes w/out Fish	HUK	POK	THE	STS		ULK			SAE							
Lakes With Special Faunal Populations																
Fresh Marsh - Shallow Emergent Vegetation	KAH HUK SMK POSA		UPK THE	SNS	MOKA LIK		SWR									
Fresh Marsh - Deep	KAH POS															
Bog Ponds	TEK BOE SMK	UPKA						SHG								
Bog Meadows	SUK BOE HUK POSA KAH			SNS	MOKA											
Wet Meadows	SMK BOE KAH			STS	OHK MOKA LIK		SWR	PYK				GRE		WHE		
Thermal Springs																

M= Major representative in zone

m= Minor representative in zone

Targeted Need

O The tailed frog found in Horse Creek

OO Golden Trout

xyz = abbreviation of established RNA

xyz = abbreviation of **recommended RNA**

ENERGY CONSERVATION

It is the goal of the Northern Region to reduce its energy consumption by 20 to 30 percent below the 1975 level of use by 1985. To achieve this goal, each Forest and the Regional Office will evaluate its ability to reduce energy use 10 to 30 percent below the 1975 level. Tables 11-13 and -14 provide the goals the Regional Office and National Forests will use in their analysis.

TABLE 11-13.--Energy conservation goals for the Northern Region (electricity, natural gas, heating oil, liquid propane in millions of Btu's).

Regional Analysis Areas and National Forests	Estimated 1975 use	1985 goal
	----------million Btu's----------	
Northern Idaho	60,300	54,300 - 42,200
*daho Panhandle	39,900	35,900 - 27,900
Clearwater	12,100	10,900 - 8,400
Nezperce	8,400	7,600 - 5,900
Western Montana	46,800	42,100 - 32,800
Bitterroot	18,500	16,700 - 13,000
Flathead	11,700	10,600 - 8,200
Kootenai	9,000	8,100 - 6,300
Lolo	7,500	6,800 - 5,300
Central and Western Montana and North Dakota	34,700	31,200 - 24,300
Beaverhead	2,300	2,100 - 1,600
Custer	1,500	1,300 - 1,000
Deerlodge	15,500	14,000 - 10,900
Gallatin	4,600	4,200 - 3,200
Helena	3,900	3,500 - 2,700
Lewis & Clark	6,900	6,200 - 4,900
Regional Office	24,700	22,200 - 17,300
Northern Region Goal	166,500	133,200 - 116,600 a/

a/ Total Regional reduction in energy use would be 20 to 30 percent, although an evaluation of reducing 10 to 30 percent will be done by Forests and Regional Office.

TABLE II-14.--Gasoline and diesel conservation goals for the Northern Region a/

Regional Analysis Areas and National Forests	Approved FY 1979 Base, Adjusted for 1975 b/		1985 Goal	
	100's-of-gallons			
Northern Idaho	8,219	(1,065)	7,398	(5,753)
Idaho Panhandle	4,153	(538)	3,738	(2,907)
Clearwater	2,802	(363)	2,522	(1,961)
Nezperce	1,264	(164)	1,138	(885)
Western Montana	7,885	(1,022)	7,097	(5,520)
Bitterroot	1,253	(162)	1,128	(877)
Flathead	1,912	(248)	1,721	(1,339)
Kootenai	2,740	(355)	2,466	(1,918)
Lolo	1,980	(257)	1,782	(1,386)
Central and Eastern Montana and North Dakota	4,690	(608)	4,221	(3,284)
Beaverhead	762	(99)	686	(533)
Custer	620	(80)	558	(434)
Deerlodge	1,267	(164)	1,140	(887)
Gallatin	739	(96)	665	(518)
Helena	560	(73)	504	(392)
Lewis & Clark	742	(96)	668	(520)
Regional Office	1,503	(195)	1,353	(1,052)
Northern Region Goal	22,297	(2,890)	17,839	(15,609) c/

a/ Figures include both gasoline and diesel. Diesel gallons are also shown in parentheses in the first column.

b/ F.Y. 1979 values were established as the base for further reductions. See worksheets, computations, and other documents developed in response to the WO 7130/7180 letter of August 7, 1980, and Interim Directive No. 4, dated February 2 on 7130, Fleet Equipment Management, on file at the Regional Office, Missoula, MT. Figures were adjusted downward to approximate 1975.

c/ Total Regional reduction in energy use would be 20 to 30 percent, although an evaluation of reducing 10 to 30 percent will be done by the Forests and Regional Office.

IMPLEMENTATION OF PRESIDENT'S REVISED STATEMENT OF POLICY FOR RPA

On December 12, 1980, Congress amended the President's Statement of Policy (Congresional Record-Senate, November 14, 1980, S14462-3). The revised Statement of Policy calls for forest and rangeland to be managed to maximize social and economic contributions to the Nation's well-being in an environmentally sound manner. In support of this principle, the statement establishes the following management direction:

1. Forests and rangeland, in all ownerships, should be managed to maximize their net social and economic contributions to the Nation's well being, in an environmentally sound manner.

2. The Nation's forested land, except such public land that is determined by law or policy to be maintained in its existing or natural state, should be managed at levels that realize its capabilities to satisfy the Nation's need for food, fiber, energy, water, soil stability, wildlife and fish, recreation, and esthetic values.

Specifically, the Statement of Policy also directs that the Nation's timber and rangelands should be maintained and enhanced, including their water and other resources values, so they can annually provide 310 million animal-unit-months of forage by the year 2030. This goal will require a 46 percent increase in total AUM's (forage production) from all ownerships by 2030. The National Forests are expected to meet their share of the increasing demand for range grazing. 7/

In addition, Congress recognized that State and private lands must be managed more intensively in order to meet the higher level timber and range production goals. Regional Foresters and Area Directors will work with State Foresters and others to determine how these goals can best be addressed through State Forest Resource Plans and cooperative programs. Specific cooperative efforts will be made to accelerate forest management planning assistance to landowners, targeting on high potential opportunities, and stimulating investments on private lands with full consideration of individual landowner objectives. 7/

3. The productivity of suitable forested land, in all ownerships, should be maintained and enhanced to minimize the inflationary impacts of wood product prices on the domestic economy and permit a net export of forest products by the year 2030.

4. In order to achieve this goal, it is recognized that in the major timber growing regions most of the commercial timber lands will have to be brought to and maintained, where possible, at 90 percent of their potential level of growth, consistent with the provisions of the National Forest Management Act of 1976 on Federal lands, so that all resources are utilized in the combination that will best meet the needs of the American people.

5. Forest and rangeland protection programs should be improved to more adequately protect forest and rangeland resources from fire, erosion, insects, disease, and the introduction or spread of noxious weeds, insects, and animals.

Specifically, protection measures for State and private lands will be encouraged through S&PF programs and the need for these measures will be considered in State Forest Resource Plans. 7/

6. The federal agencies carrying out the policies contained in this Statement will cooperate and coordinate their efforts to accomplish the goals contained in this Statement and will consult, coordinate, and cooperate with the planning efforts of the States.

Forest Service research programs will be directed toward accomplishment of the goals contained in the Statement of Policy. Based on the need for new technology, as identified in the planning process, research will develop proposals which will provide a cost-effective, scientific base for achieving the goals. The Forest Service will continue to coordinate forestry research planning with the States and other Federal Agencies. 7/

The goals of this management direction will be implemented as an integral part of the annual budget process. New data and information will be incorporated as developed through National, Regional, and Forest land and resource management plans and programs.

ASSIGNMENTS OF RPA PROGRAM OBJECTIVES TO THE NORTHERN REGION

Based on the 1980 RPA Assessment, the 1980 National Program has assigned resource outputs, activities, and associated costs to the various Regions in the Forest Service. Table II-15 displays the RPA objectives assigned to the Northern Region's National Forest System. For comparison purposes, we have included the outputs and activities of the current (F.Y. 1980) Regional Program.

The Northern Region's State and Private Forestry Program displayed in table II-16 is based upon data and information provided by the States for the 1980 RPA Assessment, as well as established funding allocation procedures developed in cooperation with the National Association of State Foresters. Base year (1978) data are included for comparison purposes.

7/ Chief of the Forest Service, 1910 letter, "Revised President's Statement of Policy," March 30, 1981, USDA-Forest Service, Washington, D.C.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
REGIONAL TOTAL - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	3600000	3700000	3800000	3900000	4400000	4700000	4800000	5300000	5900000
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	7500000	7500000	7500000	7500000	7700000	8000000	8400000	8700000	8900000
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES	13	126	146	166	186	196	206	216	226	236
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES	4800000	6700000	7100000	7100000	7100000	7100000	7100000	7100000	7100000	7100000
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	N/A	238000	238000	238000	238000	218000	192000	163000	128000	126000
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	0	20	40	70	150	180	180	180	180
GRAZING USE (LIVESTOCK)	AUMS	1405000	1422000	1425000	1429000	1434000	1450000	1499000	1599000	1699000	1799000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	1191	1135	1201	1212	1225	1310	1454	1653	1817	2021
REFORESTATION /6/	ACRES	20923	57000	59000	60000	60000	34000	36000	36000	40000	45000
TIMBER STAND IMPROVEMENT	ACRES	6297	19000	20000	21000	21000	32000	39000	41000	44000	48000
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	31827	36700	37500	38300	39100	39100	39100	39100	39100	39100
MINERALS											
MINERAL LEASES AND PERMITS	CASES	2207	2407	2807	47697	3407	3600	3655	4264	4769	4822
HUMAN & COMMUNITY DVLPMENT		919	932	932	932	932	98	98	98	98	98
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE										
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	856	830	817	857	828	828	828	837	799
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES	19.0	32.5	32.7	33.1	33.6	38.6	27.8	27.7	27.7	27.7
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	21.9	21.9	21.9	21.9	44.4	0.1	0.1	0.1	0.1
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	1488	2900	3000	2900	2900	2800	2800	2700	2700	2700
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES	28	74	76	81	80	80	80	45	45	9
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS										
WORK FORCE /4/	THOUSAND STAFF-YR										
COSTS											
OPERATIONAL	THOUSAND DOLLARS		46600	48200	51300	51900	107800	102400	113100	112600	120600
CAPITAL INVESTMENTS	THOUSAND DOLLARS		126700	129500	137500	131300	113200	103000	108300	110000	102900
BACKLOG	THOUSAND DOLLARS		12700	12700	12700	12700	2400	2800			
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	147979	173300	177700	188800	183200	221000	205400	221400	222600	223500
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	5502	52200	52100	51900	51700	32000				
UNIT TOTAL	THOUSAND DOLLARS	153481	225500	229800	240700	234900	253000	205400	221400	222600	223500

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985.
/2/ ALL COSTS AND RETURNS ARE SHOWN IN CONSTANT 1978 DOLLARS.
/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN AND WILL NOT BE ASSIGNED AHEAD OF FOREST PLAN DEVELOPMENT.
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN AND WILL NOT BE ASSIGNED AHEAD OF FOREST PLAN DEVELOPMENT.

ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

Table II-16

PROJECTED STATE AND PRIVATE FORESTRY PROGRAM OUTPUTS
ACTIVITIES, AND COSTS 5/
Region 1

Program Element and Activity	Unit of Measure	Base Year 1978	Annual Units 1981	1982	1983	1984	1985	1986-1990	1991-2000	2001-2010	2011-2020	2021-2030
RECREATION												
Cooperative Technical Assistance for Dispersed Recreation	Thousand Acres	.8	.5	1.1	1.8	2.5	3.2	3.2	3.2	3.8	4.3	4.7
WILDLIFE & FISH												
Cooperative Technical Assistance for Wildlife Habitat Improvement	Thousand Acres	.2	.6	1.0	1.5	2.0	2.5	2.6	3.1	3.5	4.0	4.4
RANGE												
Cooperative Technical Assistance for Range Improvement	Thousand Acres	.9	1.0	.7	1.1	1.5	1.9	1.9	1.9	2.1	2.3	2.5
TIMBER												
Reforestation (RFA, FIP, ACP)	Thousand Acres	.5	.1	.4	.4	.4	.4	.4	.4	.5	.9	1.4
Timber Stand Improvement (RFA, FIP, ACP)	Thousand Acres	1.7	1.3	3.4	3.4	3.4	3.4	3.4	3.4	3.7	3.8	4.0
Timber Prepared for Harvest	Million Cubic Feet (MMCF)	2.2	1.4	2.3	2.8	3.3	3.8	3.8	3.8	4.1	4.4	4.7
Woodland Owners Assisted	Thousand Acres	2.1	1.3	1.4	1.8	2.2	2.6	2.6	2.6	2.9	3.0	3.3
Improved Utilization of Wood	Million Cubic Feet (MMCF)	8.1	8.0	10.2	12.5	14.7	17.0	17.0	17.0	17.0	17.0	17.0
PROTECTION												
Insect & Disease Management Surveys	Million Acres	34.6	27	29	30	32	35	35	36	37	37	37
Rural Community Fire Protection	Thousand approved applications	.10	.10	.14	.14	.14	.14	.14	.14	.15	.15	.16
Fire Loss on Protected Area	Thousand Acres Burned	21.3	37.3	33.5	32.7	31.7	30.6	30.6	30.6	30.6	30.6	30.6
WATER, MINERALS, LANDS and SOILS												
State Forest Resource Planning	Million Acres	0	1.7	4.5	4.5	3.3	3.1	3.2	3.5	3.2	3.2	3.2
Cooperative Technical Assistance for Landowner Forest Management Plans	Million Acres	.06	.04	.07	.10	.12	.15	.15	.15	.15	.15	.15
Cooperative Technical Assistance	Person Years	0	5.0	5.5	6.0	6.5	7.0	7.0	7.0	7.0	7.0	7.0
WORKFORCE	Thousand Staff Years	.03	.03	.05	.05	.05	.06	.05	.05	.05	.05	.05
COSTS STATE & PRIVATE 1/ FORESTRY Operational	Million Dollars	.7	.6	.9	.9	1.0	1.1	1.1	1.1	1.1	1.1	1.1
Capital Investments 2/	Million Dollars	2.5	2.6	2.7	3.1	3.4	3.7	3.7	3.8	3.8	3.8	3.8
Total Appropriated 3/	Million Dollars	3.2	3.2	3.6	4.0	4.4	4.8	4.8	4.9	4.9	4.9	4.9
Allocated 4/	Million Dollars	.5	.8	1.3	1.4	1.5	1.6	1.2	1.2	1.3	1.3	1.3
Total S&PF	Million Dollars	3.7	4.0	4.9	5.4	5.9	6.4	6.0	6.1	6.2	6.2	6.2

1/ All costs are shown in constant 1978 dollars.

2/ S&PF capital investments include such activities as: reforestation, timber stand improvement; preparation of landowner forest management plans; cooperative forest resource planning; insect and disease surveys; and fire management planning and fuel treatment.

3/ Projected estimates of funds appropriated to the Forest Service for cooperative forestry assistance under P.L. 95-313

4/ Projected estimates of funds appropriated to other USDA agencies for programs which receive assistance from the Forest Service and State Forestry agencies, including (1) forestry practices under the Agricultural Conservation Program and the Forestry Incentives Program funded through the Agricultural Stabilization and Conservation Service; (2) rural community fire protection funded through the Farmers Home Administation and (3) funds allocated to the Forest Service by the Soil Conservation Service for the forestry aspects of watershed planning, flood prevention, river basin surveys, and resource conservation and development.

5/ The program includes the objectives for all of Idaho (R-1 and R-4) except for Insect and Disease Management Surveys which are for Northern Idaho only. Cost figures are for R-1 only.

ASSIGNMENTS TO THE NATIONAL FORESTS

The Region has distributed its share of national RPA objectives among the National Forests in the Region. Tables II-17 to II-29 display each Forest's share of the Region's RPA objectives 8/. The tables also display RPA cost estimates, which do not sum to the Regional total because the Regional Office costs have been subtracted. Forest Plans will not be constrained by the RPA objectives; however, each Forest must assess its capability to meet its share of the 1980 RPA Program. Forest Plans will consider a wide range of alternatives, one or more of which will meet the objectives assigned to the Forest by the Region.

Alternatives with sale schedules which depart from the principles of non-declining flow but which lead to better attaining the overall objectives of multiple-use management shall be evaluated when any of the following conditions are indicated:

i. None of the other alternatives considered provides a sale schedule that achieves the assigned goals of the RPA Program.

ii. High mortality losses from any cause can be significantly reduced or prevented or forest age-class distribution can be improved, thereby facilitating future sustained-yield management.

iii. Implementation of the corresponding base sale schedule would cause a substantial adverse impact upon a community in the economic area in which the Forest is located.

iv. It is reasonable to expect that overall multiple-use objectives would otherwise be better attained.

Departure volumes in National Forest plans may be in addition to the timber outputs shown in the RPA Program, or may constitute a preferred means of reaching the RPA output target. Additional volumes and costs that may be obtained through departure will be shown in the Annual Evaluation Report for the RPA Program."

The results of the Forest Plans will be used to revise and update RPA during the next cycle in 1985.

8/ These shares were distributed based on management plans and inventories completed prior to NFMA, existing management direction, other available information such as historic output levels, and the Forests input to the 1980 RPA. The distribution of the shares may change during Forest planning. The process used to distribute the shares to the Forests is on file in the Regional Office.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
BEAVERHEAD N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	199840	205680	211510	217430	246400	265640	273170	300620	333760
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	283000	283000	283000	283000	290000	300000	313000	321700	327500
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	4185	8820	9300	9620	9840	13650	12690	11280	8590	8170
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	196600	193090	193420	193860	194450	198000	203000	228000	245000	262000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	28	22	24	24	25	31	36	40	44	49
REFORESTATION /6/	ACRES	21	1770	2000	1950	2090	1220	1400	1650	1820	2040
TIMBER STAND IMPROVEMENT	ACRES	0	130	130	160	240	460	790	830	970	1140
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	1560	1552	1586	1620	1654	1654	1655	1656	1656	1656
MINERALS											
MINERAL LEASES AND PERMITS	CASES	170	150	180	210	230	250	250	290	320	330
HUMAN & COMMUNITY DVLPMENT											
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	6	34	34	33	33	4	4	3	4	4
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	80	180	180	170	170	170	170	150	160	170
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	4608	5700	6600	7000	6800	8400	7700	8400	8500	8300
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	2	2000	2000	2000	2000	2000				
UNIT TOTAL	THOUSAND DOLLARS	4610	7700	8600	9000	8800	10400	7700	8400	8500	8300

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985
/2/ ALL COSTS AND RETURNS ARE SHOWN IN CONSTANT 1978 DOLLARS.
/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT

ABBREVIATIONS USED AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
BITTERROOT N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	95180	98570	101950	105420	116030	117550	112510	116020	121950
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	401000	401000	401000	401000	419000	447000	450800	480900	500800
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	5674	23730	19270	16350	14290	10890	6890	5940	4500	4470
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	(FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS)								
GRAZING USE (LIVESTOCK)	AUMS	14400	13500	13510	13530	13570	14000	14000	16000	18000	20000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	43	34	34	34	34	36	40	45	50	56
REFORESTATION /6/	ACRES	993	2000	2110	2240	2110	1190	1240	1400	1670	1980
TIMBER STAND IMPROVEMENT	ACRES	369	1170	1200	1480	1350	2000	2310	2160	2050	1990
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	2500	2380	2432	2483	2535	2519	2483	2459	2459	2459
MINERALS											
MINERAL LEASES AND PERMITS	CASES	15	20	30	30	40	40	40	50	50	50
HUMAN & COMMUNITY DVLPMENT		248	149	142	141.	135	14	13	11	11	10
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE										
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	82	200	210	200	200	200	200	180	190	200
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	6673	5900	7300	7300	7000	8700	8000	8700	8700	8800
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	1764	5000	5000	5000	5000	3000				
UNIT TOTAL	THOUSAND DOLLARS	8437	10900	12300	12300	12000	11700	8000	8700	8700	8800

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985
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/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT

ABBREVIATIONS USED AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
CLEARWATER N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR. 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	176580	179970	184380	187790	214900	236270	247490	288160	333760
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	630000	630000	630000	630000	633000	638000	643800	648900	652200
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	7800	37740	40370	42100	43310	31190	41170	32350	26130	26910
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	(FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.)								
GRAZING USE (LIVESTOCK)	AUMS	16400	16270	16290	16320	16360	17000	17000	17000	18000	20000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	155	165	192	195	200	216	255	288	318	335
REFORESTATION /6/	ACRES	2261	9080	9670	12040	11800	6250	5340	5230	5960	6640
TIMBER STAND IMPROVEMENT	ACRES	1100	1870	1960	1970	2180	3740	5580	5990	5690	7540
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	4700	5061	5172	5282	5392	5413	5460	5521	5520	5520
MINERALS											
MINERAL LEASES AND PERMITS	CASES	65	90	100	120	140	140	150	170	190	190
HUMAN & COMMUNITY DVLPMENT		82	67	68	67	75	8	7	7	7	6
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE										
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	155	320	330	320	320	310	310	320	310	300
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	13923	19500	17700	20800	19900	24500	22600	24500	24700	24800
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	717	3000	3000	3000	3000	0				
UNIT TOTAL	THOUSAND DOLLARS	14640	22500	20700	23800	22900	24500	22600	24500	24700	24800

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PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
CUSTER N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR. 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	331990	339590	348120	355760	400750	426670	447790	492000	545570
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	409000	409000	409000	409000	420000	435000	454000	467000	475400
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	1155	3460	3600	3680	3750	8390	5650	6360	4780	4470
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	835400	864180	866340	869120	872520	880000	905000	940000	984000	1007000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	13	1	1	1	1	3	6	6	7	8
REFORESTATION /6/	ACRES	0	390	160	210	200	180	380	470	570	700
TIMBER STAND IMPROVEMENT	ACRES	0	70	60	60	50	130	290	360	390	420
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	1045	1036	1059	1081	1104	1097	1081	1093	1093	1093
MINERALS											
MINERAL LEASES AND PERMITS	CASES	884	750	850	890	850	900	910	1060	1190	1200
HUMAN & COMMUNITY DVLPMENT											
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	9	43	50	51	49	5	5	5	5	5
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	76	120	120	120	120	110	110	100	110	120
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	3086	5700	5900	7700	7500	9200	8500	9200	9300	9300
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	8	2000	2000	2000	1000	1000				
UNIT TOTAL	THOUSAND DOLLARS	3094	7700	7900	9700	8500	10200	8500	9200	9300	9300

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PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
DEERLODGE N.F - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES WIS)	RVD	N/A	235800	243200	249430	256930	291150	313820	323520	355740	394770
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	474000	474000	474000	474000	486000	503000	558000	573000	592700
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ	3360	9770	10470	10920	11240	13050	7340	7420	6430	6970
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	68100	67550	67620	67750	67910	70000	78000	92000	102000	129000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	19	15	17	17	18	25	30	34	37	41
REFORESTATION /6/	ACRES	582	1380	1600	2050	1930	1070	1080	1110	1290	1510
TIMBER STAND IMPROVEMENT	ACRES	635	500	520	510	540	860	1110	1160	1230	1330
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	566	635	649	663	677	684	700	709	709	709
MINERALS											
MINERAL LEASES AND PERMITS	CASES	117	130	160	180	200	210	220	250	280	290
HUMAN & COMMUNITY DVLPMENT HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	248	126	120	117	114	12	11	10	10	9
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	70	120	120	120	120	110	110	100	110	120
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	4850	5400	5400	5300	5200	6400	5900	6400	6400	6400
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	1809	5000	5000	5000	5000	1000				
UNIT TOTAL	THOUSAND DOLLARS	6659	10400	10400	10300	10200	7400	5900	6400	6400	6400

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PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
FLATHEAD N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES WIS)	RVD	N/A	284440	292450	300430	308570	339370	343190	327790	337560	354470
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	584000	584000	584000	584000	608000	647000	702000	745000	773900
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	11660	12710	13460	13950	14290	10840	6770	5830	4560	4470
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	7700	7640	7650	7660	7690	8000	8000	11000	16000	20000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	134	135	125	120	115	114	120	135	149	167
REFORESTATION /6/	ACRES	3110	5300	4380	4730	4240	2480	2830	2620	2890	3220
TIMBER STAND IMPROVEMENT	ACRES	631	2430	2640	2840	2790	4070	4540	4770	4890	5110
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	7000	6511	6653	6795	6937	6937	6936	7026	7026	7025
MINERALS											
MINERAL LEASES AND PERMITS	CASES	135	140	170	200	220	230	240	280	310	310
HUMAN & COMMUNITY DVLPMENT											
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	109	83	81	79	81	10	14	12	12	11
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	109	260	270	260	260	250	250	240	230	220
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	18110	17900	16100	15700	14700	18100.	16700	18200	18300	18400
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	1165	8000	8000	8000	8000	2000				
UNIT TOTAL	THOUSAND DOLLARS	19275	25900	24100	23700	22700	20100	16700	18200	18300	18400

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985.
/2/ ALL COSTS AND RETURNS ARE SHOWN IN CONSTANT 1978 DOLLARS.
/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.

ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

Table II-23

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
GALLATIN N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR. 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	686200	708110	729870	752120	851360	915560	944830	1039120	1153160
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	1193000	1193000	1193000	1193000	1224000	1268000	1322000	1359000	1383300
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	3171	3020	3200	3320	3400	10620	2230	1980	1510	1430
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	43700	43440	43490	43570	43680	44000	50000	57000	64000	70000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	35	20	20	16	13	16	19	21	23	26
REFORESTATION /6/	ACRES	361	1010	1750	2350	2610	1330	980	930	1050	1190
TIMBER STAND IMPROVEMENT	ACRES	0	600	600	630	540	810	950	1070	1210	1370
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	2200	1919	1961	2003	2045	2045	2046	2048	2048	2048
MINERALS											
MINERAL LEASES AND PERMITS	CASES	58	320	380	450	500	520	530	620	690	700
HUMAN & COMMUNITY DVLPMENT											
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	12	34	37	36	39	4	4	4	4	4
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	125	200	210	200	200	200	200	180	180	170
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	4325	6500	6700	7600	7200	8900	8200	9000	9000	9000
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	123	4000	4000	4000	4000	5000				
UNIT TOTAL	THOUSAND DOLLARS	4448	10500	10700	11600	11200	13900	9200	9000	9000	9000

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985.
/2/ ALL COSTS AND RETURNS ARE SHOWN IN CONSTANT 1978 DOLLARS.
/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)
DEVELOPMENT
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)
DEVELOPMENT.

ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
HELENA N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR. 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	93060	95350	97620	99920	112950	121070	124270	136790	151930
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	157000	157000	157000	157000	161000	167000	174200	179100	182300
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	62	1370	1500	1580	1640	4420	3660	3250	2480	2360
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	48500	48110	48170	48240	48370	49000	50000	52000	54000	65000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	18	15	17	19	20	26	30	34	37	41
REFORESTATION /6/	ACRES	112	2250	2700	1940	2110	1320	1780	1820	2060	2350
TIMBER STAND IMPROVEMENT	ACRES	0	240	280	280	310	500	670	890	1080	1300
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	415	486	497	507	518	513	502	487	490	492
MINERALS											
MINERAL LEASES AND PERMITS	CASES	112	110	130	160	170	180	190	220	250	250
HUMAN & COMMUNITY DVLPMENT											
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	14	31	32	32	32	3	3	3	3	3
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	105	120	120	120	120	110	110	100	110	120
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	3730	5300	7400	5900	5700	7000	6500	7100	7100	7100
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	55	2000	2000	2000	2000	2000				
UNIT TOTAL	THOUSAND DOLLARS	3785	7300	9400	7900	7700	9000	6500	7100	7100	7100

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985.
/2/ ALL COSTS AND RETURNS ARE SHOWN IN CONSTANT 1978 DOLLARS.
/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.

ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
IDAHO PANHANDLE N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	652360	667410	682140	697240	799170	881490	922520	1071430	1247410
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	706000	706000	706000	706000	708000	712000	720600	726300	730100
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	10018	55950	59270	61440	62980	58950	67910	57020	44570	43660
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	13100	13000	13010	13030	13060	14000	14000	16000	18000	20000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	305	280	300	301	305	316	340	383	420	473
REFORESTATION /6/	ACRES	4300	9200	9420	10440	9700	5590	6190	6110	6680	7410
TIMBER STAND IMPROVEMENT	ACRES	1500	3910	4070	4100	3970	6010	7230	7240	7690	8310
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	5500	6541	6684	6826	6969	6946	6895	6759	6759	6758
MINERALS											
MINERAL LEASES AND PERMITS	CASES	175	190	230	270	300	320	320	370	420	420
HUMAN & COMMUNITY DVLPMENT											
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	71	81	79	88	94	10	9	9	9	9
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	171	380	390	380	380	360	360	370	360	360
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	27814	28800	28100	32600	32100	39600	36500	39700	40000	40000
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	602	7000	7000	7000	8000	5000				
UNIT TOTAL	THOUSAND DOLLARS	28416	35800	35100	39600	40100	44600	36500	39700	40000	40000

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985.
/2/ ALL COSTS AND RETURNS ARE SHOWN IN CONSTANT 1978 DOLLARS.
/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT

ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
KOOTENAI N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR. 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	103640	107150	110620	114190	125580	126950	122160	125350	131280
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	373000	373000	373000	373000	390000	416000	452000	480000	499000
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	3051	16670	17070	17330	17510	13200	8130	7420	5990	6080
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	12600	12500	12510	12550	12580	13000	13000	15000	18000	20000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	214	213	225	225	225	235	248	292	315	345
REFORESTATION /6/	ACRES	5569	12530	12160	10790	11180	6110	5820	5420	5790	6280
TIMBER STAND IMPROVEMENT	ACRES	1052	3710	4020	4490	4620	6710	7380	7470	7660	8030
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	3080	2426	2478	2531	2584	2568	2531	2506	2506	2506
MINERALS											
MINERAL LEASES AND PERMITS	CASES	94	70	80	100	110	110	110	130	150	150
HUMAN & COMMUNITY DVLPMENT											
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	2	99	100	98	93	10	9	9	9	9
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	138	320	330	320	320	310	310	320	290	280
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	16655	22100	22300	22100	21000	25900	23900	26000	26200	26300
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	110	2000	2000	2000	2000	2000				
UNIT TOTAL	THOUSAND DOLLARS	16765	24100	24300	24100	23000	27900	23900	26000	26200	26300

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985.
/2/ ALL COSTS AND RETURNS ARE SHOWN IN CONSTANT 1978 DOLLARS.
/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)
DEVELOPMENT.
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)
DEVELOPMENT.

ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

Table II-27

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
LEWIS-CLARK N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR. 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	273850	281760	289560	296480	335940	361990	372820	409850	454650
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	623000	623000	623000	623000	640000	663000	692000	711000	724000
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	4225	3150	3320	3430	3520	6000	7900	7210	5780	5810
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	79600	72410	72490	72620	72800	73000	76000	83000	88000	90000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	13	10	12	13	16	21	30	34	37	41
REFORESTATION /6/	ACRES	337	1020	1020	1330	1500	870	950	1150	1370	1630
TIMBER STAND IMPROVEMENT	ACRES	0	330	380	430	440	680	840	960	1060	1180
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	1600	1617	1652	1687	1722	1712	1688	1707	1706	1706
MINERALS											
MINERAL LEASES AND PERMITS	CASES	173	170	200	240	270	280	280	330	370	380
HUMAN & COMMUNITY DVLPMENT		1	41	44	44	44	5	4	5	5	5
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE										
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	134	120	120	120	120	110	110	100	110	120
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	3467	4800	5100	6500	6700	8300	7600	8300	8300	8400
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	8	3000	3000	3000	3000	2000				
UNIT TOTAL	THOUSAND DOLLARS	3475	7800	8100	9500	9700	10300	7600	8300	8300	8400

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985.
/2/ ALL COSTS AND RETURNS ARE SHOWN IN CONSTANT 1978 DOLLARS.
/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.

ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
LOLO N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	BASE YR. 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	321440	332110	341620	352480	387860	392590	374930	385890	405090
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	1153000	1153000	1153000	1153000	1204000	1283000	1392000	1478000	1536000
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS											
WILDERNESS MANAGEMENT /4/	ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	21610	31910	26790	23440	21080	16060	10160	8480	6510	6260
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	NOT APPLICABLE								
GRAZING USE (LIVESTOCK)	AUMS	14300	14190	14210	14230	14270	14470	15000	16000	18000	20000
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	127	125	130	136	137	144	155	175	193	215
REFORESTATION /6/	ACRES	2195	6370	5650	5030	5610	3340	4020	4020	4420	4930
TIMBER STAND IMPROVEMENT	ACRES	1005	3490	3450	3190	2890	4240	4790	5060	5440	5940
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	2900	3175	3244	3313	3383	3407	3461	3463	3463	3463
MINERALS											
MINERAL LEASES AND PERMITS	CASES	59	60	70	80	90	90	100	110	120	130
HUMAN & COMMUNITY DVLPMENT											
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE	5	89	90	91	91	9	9	9	11	12
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISITION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	126	260	270	260	260	250	250	240	230	220
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	9678	15700	16800	16400	15700	19400	17800	19400	19500	19600
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	590	8000	8000	7000	7000	7000				
UNIT TOTAL	THOUSAND DOLLARS	10268	23700	24800	23400	22700	26400	17800	19400	19500	19600

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985
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/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
/8/ THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT

ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

PROJECTED NATIONAL FOREST SYSTEM PROGRAM OUTPUTS, ACTIVITIES, AND COSTS
NEZPERCE N.F. - NORTHERN REGION

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEABURE	BASE YR. 1980	1982	1983	1984	1985	1986 -1990	1991 -2000	2001 -2010	2011 -2020	2021 -2030
RECREATION											
DEVELOPED RECREATION USE (INCLUDES VIS)	RVD	N/A	145910	148930	152910	155920	178820	197490	206780	240300	278010
DISPERSED RECREATION USE (INCLUDES WILDLIFE & FISH)	RVD	N/A	514000	514000	514000	514000	517000	521000	525600	529800	532600
TRAIL CONSTRUCTION/ RECONSTRUCTION /4/	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WILDERNESS			(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF								
WILDERNESS MANAGEMENT /4/	ACRES		FOREST PLAN.)								
WILDLIFE & FISH											
WILDLIFE HABITAT IMPROVEMENT /5/	ACRE-EQ.	4415	29720	30410	30860	31180	20780	11520	8480	6080	5360
ANADROMOUS FISH IMPROVEMENT /5/	THOUSAND POUNDS	N/A	(FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.)								
GRAZING USE (LIVESTOCK)	AUMS	56600	40140	40300	40500	40740	39900	39900	39900	39900	39900
TIMBER											
PROGRAMMED SALES OFFERED	MILLION BD-FT	105	100	104	110	115	126	147	165	182	203
REFORESTATION /6/	ACRES	1102	4710	6370	4920	4920	3060	4020	4070	4540	5130
TIMBER STAND IMPROVEMENT	ACRES	5	550	680	870	1090	1800	2530	3040	3650	4350
WATER											
MEETING WATER QUALITY GOALS	THOUSAND ACRE-FT	2500	3363	3437	3510	3583	3609	3666	3668	3668	3667
MINERALS											
MINERAL LEASES AND PERMITS	CASES	164	200	230	270	300	320	320	380	420	430
HUMAN & COMMUNITY DVLPMENT		6	55	56	55	53	6	5	10	10	10
HUMAN RESOURCE PROGRAMS /1/	ENROLLEE										
PROTECTION											
FIRE MANAGEMENT EFFECTIVENESS INDEX /4/	DOLLARS/ M. ACRES	N/A	(THESE RPA-ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
FUELBREAKS & FUEL TREATMENT /4/	THOUSAND ACRES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
LANDS											
LAND PURCHASE & ACQUISI- TION (EXCLUDES EXCHANGE)/4/	THOUSAND ACRES	N/A	(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
SOILS											
SOIL & WATER RESOURCE IMPROVEMENT (IMPROVED WATERSHED CONDITION)	ACRES	117	320	330	320	320	310	310	320	310	300
FACILITIES /4/											
ROAD CONSTRUCTION RECONSTRUCTION (ARTERIAL, COLLECTOR)	MILES		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
RETURNS TO GOVERNMENT /2/4/	MILLION DOLLARS		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
WORK FORCE /4/	THOUSAND STAFF-YR		(THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
COSTS											
OPERATIONAL /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
CAPITAL INVESTMENTS /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
BACKLOG /8/	THOUSAND DOLLARS		(THESE FUNDS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.)								
TOTAL APPROPRIATED /2/3/	THOUSAND DOLLARS	11311	9800	11100	11900	11500	14200	13100	14200	14300	14400
TOTAL ALLOCATED /2/7/	THOUSAND DOLLARS	818	1000	1000	2000	2000	0				
UNIT TOTAL	THOUSAND DOLLARS	12129	10800	12100	13900	13500	14200	13100	14200	14300	14400

/1/ HUMAN RESOURCES PROGRAMS WHOSE FUNDS ARE ALLOCATED TO THE FOREST SERVICE ARE NOT INCLUDED IN FIGURES BEYOND 1985
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/3/ NFS APPROPRIATED FUNDS INCLUDE ALL YCC AND COOPERATOR FUNDS.
/4/ THESE RPA ASSIGNMENTS WILL RESULT FROM DEVELOPMENT OF FOREST PLAN.) DEVELOPMENT.
/5/ FORESTS HAVE ALSO BEEN ASSIGNED POPULATION TARGETS SO THEY CAN ASSESS OUR ABILITY TO MEET A SHARE OF EACH STATES FISH AND WILDLIFE GOALS.
/6/ REFORESTATION ACRE OBJECTIVES INCLUDE BACKLOG AREAS.
/7/ ALLOCATED FUNDS ARE NOT PROJECTED BEYOND 1990.
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ABBREVIATIONS USED: AUM = ANIMAL UNIT MONTH; RVD = RECREATION VISITOR DAY; N/A = NOT AVAILABLE.

STATE SHARES OF STATE AND PRIVATE FORESTRY PROGRAM OBJECTIVES

The projected State and Private Forestry Program objectives and estimated State grants are shown by State in tables II-30 to II-32. While these projections are based on current estimates, actual State objectives and proposed budgets will continue to be negotiated annually at the National level, in accordance with the Cooperative Forestry Assistance Act (PL 95-313) and other agency authorities.

In the future, State Forest Resource Plans developed by the States will provide the basic data information for S&PF aspects of Forest Service planning. The target date for completing these State Plans is 1983. Thus the States, like the National Forests, will have better information for the 1985 RPA Progam update.

Table II-30

STATE AND PRIVATE FORESTRY

1980 RPA PROGRAM DISPLAY

FOR THE STATE OF IDAHO (R-1 and R-4)

Program Element & Activity	Unit of Measure	Base Year 1978	Annual Units 1981	1982	1983	1984	1985	1995
RECREATION								
Copperative Technical Assistance for Dispersed Recreation	Thousand Acres	.06	.2	.5	.7	1.0	1.3	1.3
WILDLIFE & FISH								
Cooperative Technical Assistance for Wildlife Habitat Improvement	Thousand Acres	.02	.2	.4	.6	.8	1.0	1.7
RANGE								
Cooperative Technical Assistance for Range Improvement	Thousand Acres	0	.3	.2	.4	.6	.7	.7
TIMBER								
Reforestation (RFA, FIP, ACP)	Thousand Acres	.21	.1	.2	.2	.2	.2	.2
TIMBER STAND IMPROVEMENT (RFA, FIP, ACP)	Thousand Acres	.38	.5	1.6	1.6	1.6	1.6	1.6
Timber prepared for Harvest	Million Cubic Feet (MMCF)	.48	.8	1.2	1.5	1.7	2.0	2.0
Woodland Owners Assisted	Thousand Owners	.44	.5	.4	.7	.9	1.0	1.0
Improved Utilization of Wood	Million Cubic Feet (MMCF)	3.95	4.0	5.2	6.5	7.7	9.0	9.0
PROTECTION								
Insect & Disease Management Surveys	Million Acres	18.4	24.0	26.0	28.2	29.1	30.5	30.5
Rural Community Fire Protection	Thousand Approved Applications	.02	.04	.04	.04	.04	.04	.04
Fire Loss on Protected Area	Thousand Acres Burned	11.04	28.0	25.1	24.5	23.7	22.9	22.9
WATER, MINERALS, LANDS, AND SOIL								
State Forest Resources Planning	Million Acres	0	.42	.88	.88	.18	.06	.12
Cooperative Technical Assistance for Landowner Forest Management Plans	Million Acres	.01	.017	.032	.042	.060	.071	.071
Cooperative Technical Assistance	Person Years	0	2.0	2.0	2.5	3.0	3.0	3.0
ESTIMATED STATE GRANTS								
Appropriated Funds	Thousand Dollars	734.6	490.1	572	679	844	953	972
Allocated Funds	Thousand Dollars	77.3	57.1	112	100	123	141	70
Total Grants	Thousand Dollars	811.9	547.2	684	779	967	1094	1042

Table II-31

STATE AND PRIVATE FORESTRY

1980 RPA PROGRAM DISPLAY

FOR THE STATE OF MONTANA

Program Element & Activity	Unit of Measure	Base Year 1978	Annual Units 1981	1982	1983	1984	1985	1995
RECREATION								
Copperative Technical Assistance for Dispersed Recreation	Thousand Acres	.25	.2	.5	.7	1.0	1.3	1.3
WILDLIFE & FISH								
Cooperative Technical Assistance for Wildlife Habitat Improvement	Thousand Acres	.04	.3	.4	.6	.8	1.0	1.2
RANGE								
Cooperative Technical Assistance for Range Improvement	Thousand Acres	0	.4	.3	.4	.6	.7	.7
TIMBER								
Reforestation (RFA, FIP, ACP)	Thousand Acres	.24	.1	.2	.2	.2	.2	.2
TIMBER STAND IMPROVEMENT (RFA, FIP, ACP)	Thousand Acres	1.33	.8	1.8	1.8	1.8	1.8	1.8
Timber prepared for Harvest	Million Cubic Feet (MMCF)	1.7	.6	1.1	1.3	1.6	1.8	1.8
Woodland Owners Assisted	Thousand Owners	1.24	.5	.6	.7	.9	1.0	1.0
Improved Utilization of Wood	Million Cubic Feet (MMCF)	4.17	4.0	5.0	6.0	7.0	8.0	8.0
PROTECTION								
Insect & Disease Management Surveys	Million Acres	16.0	15.4	16.4	16.9	17.9	19.5	19.5
Rural Community Fire Protection	Thousand Approved Applications	.04	.02	.02	.02	.02	.02	.02
Fire Loss on Protected Area	Thousand Acres Burned	.4	5.6	5.0	4.9	4.8	4.6	4.6
WATER, MINERALS, LANDS, AND SOIL								
State Forest Resources Planning	Million Acres	0	1.18	3.61	3.61	3.11	3.04	3.19
Cooperative Technical Assistance for Landowner Forest Management Plans	Million Acres	.03	.019	.032	.042	.053	.071	.071
Cooperative Technical Assistance	Person Years	0	2.0	2.5	2.5	2.5	3.0	3.0
ESTIMATED STATE GRANTS								
Appropriated Funds	Thousand Dollars	789.2	548.4	629	733	832	946	955
Allocated Funds	Thousand Dollars	126.7	119.6	203	192	234	266	142
Total Grants	Thousand Dollars	915.9	668	832	925	1066	1212	1097

Table II-32

STATE AND PRIVATE FORESTRY

1980 RPA PROGRAM DISPLAY

FOR THE STATE OF NORTH DAKOTA

Program Element & Activity	Unit of Measure	Base Year 1978	Annual Units 1981	1982	1983	1984	1985	1995
RECREATION Cooperative Technical Assistance for Dispersed Recreation	Thousand Acres	.51	.1	.1	.4	.5	.6	.6
WILDLIFE & FISH Cooperative Technical Assistance for Wildlife Habitat Improvement	Thousand Acres	.13	.1	.2	.3	.4	.5	.7
RANGE Cooperative Technical Assistance for Range Improvement	Thousand Acres	.9	.3	.2	.3	.3	.5	.5
TIMBER Reforestation (RFA, FIP, ACP)	Thousand Acres	.07	-	-	-	-	-	-
TIMBER STAND IMPROVEMENT (RFA, FIP, ACP)	Thousand Acres	.04	-	-	-	-	-	-
Timber prepared for Harvest	Million Cubic Feet (MMCF)	.01	-	-	-	-	-	-
Woodland Owners Assisted	Thousand Owners	.39	.3	.4	.4	.4	.6	.6
Improved Utilization of Wood	Million Cubic Feet (MMCF)	0	-	-	-	-	-	-
PROTECTION Insect & Disease Management Surveys	Million Acres	.2	.5	.6	.6	.7	.7	.7
Rural Community Fire Protection	Thousand Approved Applications	.04	.04	.08	.08	.08	.08	.08
Fire Loss on Protected Area	Thousand Acres Burned	9.9	3.7	3.4	3.3	3.2	3.1	3.1
WATER, MINERALS, LANDS, AND SOIL State Forest Resources Planning	Million Acres	0	.01	.01	.01	.01	.01	.01
Cooperative Technical Assistance for Landowner Forest Management Plans	Million Acres	.02	.004	.006	.007	.007	.008	.008
Cooperative Technical Assistance	Person Years	0	1.0	1.0	1.0	1.0	1.0	1.0
ESTIMATED STATE GRANTS Appropriated Funds	Thousand Dollars	255	188.5	213	228	242	292	299
Allocated Funds	Thousand Dollars	115	124	247	255	318	363	168
Total Grants	Thousand Dollars	370	312.5	460	483	560	655	467

RESEARCH PROGRAM DIRECTION

In the Northern Region, research needed to support or improve management of the National Forests was identified in preparation of the Regional Plan. These identified research needs have been examined and put into four categories: (1) needs for which research results are currently available; (2) needs for which research is currently ongoing; (3) needs which are not true research needs, but rather managerial, operational, administrative, or policy questions; and (4) needs for which new research is needed. Only the last category is explicitly addressed in the following matrix.

Each Forest Plan will also identify research needs that will be evaluated on a Regional basis and appropriate needs identified jointly with research units of the Intermountain Research Station.

Program element	Research need
Recreation	Develop accurate and cost-effective means to measure recreation use, especially for dispersed recreation, so that use trends can be reliably determined and management programs developed.
Range	Develop management guidelines to be used for maintaining the desired balance of wild herbivores and livestock on range under different environmental situations.
Timber	Develop a reliable operational method for estimating timber yields from stands that are to be managed on a uneven-aged basis in the Northern Region. Obtain (1) data for tree regeneration success in the ponderosa pine habitat series and (2) tree growth data for existing forest stands found on ponderosa pine and Douglas-fir habitat series in northern Idaho, to improve timber yield forecasts for small private forest landowners.

Research Coordination. Regions 1 and 4 and the Intermountain Station have developed a systematic process to aid in identifying problems that require research, new technology, and literature searches.

Once a problem is identified, Northern Region Forest Service personnel request literature searches and publications through the Western Forestry Information Net (WESTFORNET). If the information to solve the problem is not available through WESTFORNET, personnel utilize the Research-Needs-Response Program, which works as follows:

By January 1, Region and Station Research Coordinators will request research needs from within the Forest Service organization, from the States, and from other Federal agencies and cooperators as appropriate.

The needs will be submitted on a Research Needs Form to either the Region or Station Research Coordinators by March 1. (1) When clarification is needed, the form will be returned to the originators for additional information; (2) when information is already available, the form will be referred to the appropriate Staff Director for response; (3) when information is already available and can be best answered by Research, or when information is not available, the form will be referred to an appropriate research work unit for response; and (4) priorities for new or additional research will be assigned by the Station Director.

Linkers for Technology Transfer. 9/ "Linkers" are Regional personnel assigned responsibilities for initiating and maintaining contacts with specific research work units and programs. Linkers:

1. Provide interaction and continuing liaison between Regions 1 and 4 and the INT Experiment Station research staff.

2. Develop and maintain mutual awareness of resource management activities and problems and the Station's research programs.

3. Evaluate the degree to which research results are applied by National Forest units and State and private organizations, and furnish guidance for improved research application.

4. Provide a distribution system to insure timely review of research outputs by staff specialists for assessment of application opportunities and feedback on use potentials.

5. Provide for identification and adoption of technology transfer methods that insure broad application of research results, with special attention to identifying and reaching target audiences.

9/ USDA-Forest Service Northern Region Memorandum, Oct. 27, 1980, Linkers for Technology Transfer.

III. MONITORING AND EVALUATION

The Northern Region's monitoring system is designed to indicate whether or not Forest Service programs are meeting the plan objectives. Regional programs and activities are implemented through Forest Plans and State Forest Resource Plans. Monitoring results from these plans will be evaluated and summarized to monitor the Regional situation.

Areas to be monitored in the Regional Plan are shown in table III-1. Specific actions, effects to be monitored, frequency of measurement, reporting period, and expected precision and reliability of the monitoring process will be identified in the Forest Plans. States will also be encouraged to put this information in their Forest Resource Plans.

The Region will use the information provided by Forests, States, and other sources to prepare Regional monitoring reports.

The Regional Forester will conduct reviews of National Forests to examine the degree to which Forest Supervisors are implementing management direction in Forest and Regional Plans; how well the Forest Supervisors' monitoring and evaluation system are operating; and the appropriateness of adjustments and revisions.

Changes in Regional and/or Forest Plans are accomplished by (1) amendments, (2) revisions, or (3) adjustments in implementation of plans or programs. The decisions as to method of change depends upon the significance of the deviation determined by the evaluation.

Evaluation results will also be used to determine research needs to improve the Regional and Forest monitoring and evaluation systems.

TABLE III-1.--Areas to be monitored in the Regional Plan.

Monitoring category	Actions, effects, or resources to be measured	Purpose/reason for measuring	Source of information
Land condition and resource status.	Productivity; capacity; production schedules; development schedules; long-term potentials of various resources, such as timber, range, recreation, wildlife, and fish, visual	To determine if the land and resources are being managed so as to meet long-term RPA assessment goals and assumptions. To identify and determine management practices and other conditions where insect, disease, other forest and range pest organisms and natural fuel accumulation situations are occuring which are creating special conditions or hazards to the use of National Forests and National Grassland resources.	-Forest Plans (inc. leading mgmt. prescriptions) and results of monitoring programs. -Updated RPA research and NFS assessments. -State Forest Resource Plans and monitoring results.
Program outputs	Short-term outputs (first 5 years of planning period)	To determine if RPA program objectives are being met.	-Management Attainment Report (NFS & S&PF).
	Long-term outputs (after 5 years) for National Forest System and State and private forest and rangelands	To assure that Forest Plans consider the full range of capability. To assure input into next RPA update.	-Forest Plans. -Regional Plan. -State Forest Resource Plans.
Program cost	Total budget expenditures for Forests, S&PF, Regional Office	To compare predicted expenditures with those proposed in Forest and Regional Plans.	-Program Accounting and Mgmt. Attainment Reporting System (PAMARS). -Forest Plans and the results of monitoring programs.
	Costs of selected activities by analysis area	To determine if management costs were as predicted.	-Forest Plans' projected and actual costs for management practices by analysis area.
Program environmental effects (1) Physical/biological	Effects on resources (such as soils, water, air, cultural, visual, threatened and endangered species, wildlife and fish).	To determine if effects were as anticipated.	Results of Forest Plans and State Forest Resource Plans monitoring.
(2) Social/Economic	Changes in such areas as: -Income and employment; -Population; -Market/nonmarket dependency of counties; -Structure of wood products industry; -American Indian Religious Act special use permits granted; -Payments to counties/ receipts to US Treasury; -Energy efficiency; -Other trends identified by Forests.	To determine: (1) If effects of Forest Service programs were as anticipated, and (2) If Forest Service planning objectives need to change to meet changing socioeconomic conditions.	State agencies reports (such as Environment Security or Dept. of Community Affairs) -Forest socioeconomic overviews; Forest Plans; results of inventory activities. -Forest Service and County fiscal reports -5-year timber mill census Other sources as appropriate fiscal reports -Regional Energy Management Plan -Other sources as appropriate

TABLE III-1.--Continued.

Monitoring category	Actions, effects, or resources to be measured	Purpose/reason for measuring	Source of information
Research implementation	Application of research results; changes in emphasis in research programs.	To determine: If research has helped solve problems; If research programs and NFS/S&PF perceived research needs are complementary. If NFS and S&PF managers are utilizing research results. To determine how standards are being used and if expected results are being achieved.	-Research Attainment Reports. -Forest Plan prescriptions. -Forest Plan monitoring activities/results. -RPA objectives for Research Work Unit descriptions. -Regional/Forest Plan. -State Forest Resource Plans.
Program standards and guidelines	-NFMA standards and guidelines -Other standards and guidelines developed through this Regional Plan.	To determine the level of adherence, effects, and adjustments needed for Regional standards and guidelines.	-Comments/results of 60-day review. -Forest Plan monitoring results. -Timber management records and reviews. -Timber Sale Environmental Assessments. -Timber sale contracts and utilization studies.
Public opinion	Public opinion on Forest Service programs and activities.	To identify possible new public issues. To determine if resolution of issues has been successful.	-Forest and Regional Office inform and involve activity review results, including letters, media surveys, personal contacts, appeals, and formal opinion polls.
Agency coordination	Effects of National Forest management on land, resources, and communities adjacent to National Forest lands and the effects upon natural forest management of activities on nearby lands managed by other Federal or Government agencies or under the jurisdiction of local governments or Indian Tribes.	-To identify coordination needed with other government agencies' policies, plans, and goals. -To determine if changes in forest management activities are needed to lessen impacts on adjacent lands or because of activities on adjacent lands.	-Forest Plans and results of their monitoring plans -State Forest Resource plans and results of their monitoring plans -Other agency plans and policies -Results of public opinion monitoring

IV. SUMMARY OF THE ANALYSIS OF THE MANAGEMENT SITUATION

This chapter briefly describes the mission of the Forest Service Northern Region and discusses the current management situation for the Region by program element. Resource elements are recreation, wilderness, wildlife and fish, range, timber, water, minerals, and human and community development. Support program elements are protection, lands, soils, and facilities.

Regional Overview

Programs conducted by the Forest Service Northern Region are part of the Forest Service mission to protect and manage the Nation's forest resources, and a significant part of the Federal action to protect rangelands and water resources. In carrying out its responsibilities the Forest Service Northern Region engages in the following major programs:

- Protects and manages resources on about 26 million acres of National Forest and National Grasslands.

- Cooperates with State and local governments, other Federal agencies, and organizations to protect and manage the Region's 8.5 million acres of State and private forest lands.

- Participates in research programs directed toward developing the technology and scientific knowledge required to effectively protect, manage, and use forest resources and ecosystems.

- Participates with State and local governments, Indian Tribes, and other agencies in manpower, youth, and commodity assistance programs.

The Northern Region planning area includes all of Montana and North Dakota, portions of Idaho, and small portions of South Dakota and eastern Washington. See figure I-1 at the beginning of this document. The extent of Forest Service responsibility within this area is indicated by the table below.

Table IV-1.--Acreage Within Northern Region Planning Area, in 1000's

	North Idaho	Montana	North Dakota	Region 1 b/
National Forest a/	7,844	16,753	0	24,670
National Grassland a/	0	0	1,106	1,261
Commercial Forest land In State and private ownership	3,147	5,094	291	8,532
Other lands	1,564	71,327	42,942	124,278
Total	12,555	93,174	44,339	158,174

a/ Figures include research facilities and experimental forests administered by the Forest Service.

b/ Region total includes portions of South Dakota and Washington.

The Northern Region has been divided into four analysis areas for use in developing this plan. The analysis areas used in the Regional Plan were delineated on the basis of social, economic, and demographic considerations. The areas coincide with State planning regions to provide opportunities to work with State governments on issues of mutual concern.

ANALYSIS AREAS

Northern Idaho
(including portions of Washington)

Idaho Panhandle National Forests
Clearwater National Forest
Nezperce National Forest

North Dakota
(including portions of South Dakota)

Custer National Forest
Sheyenne National Grassland a/
Grand River National Grassland a/
Little Missouri National Grassland a/
Cedar River National Grasslands a/

Central and Eastern Montana

Lewis & Clark National Forest
Helena National Forest
Gallatin National Forest
Custer National Forest
Beaverhead National Forest
Deerlodge National Forest

Western Montana

Kootenai National Forest
Flathead National Forest
Lolo National Forest
Bitterroot National Forest

a/ Administered by the Custer National Forest.

The Northern Region covers a large area diverse in both physical and social characteristics. The eastern part of the Region is characterized by rolling prairies, badlands, or grasslands. To the west, the land changes to grassy foothills, and then to valleys and mountains with extensive stands of lodgepole and ponderosa pine and other tree and plant species that have low moisture requirements. The extreme western part of the Region is also characterized by mountains, but plant communities reflect the abundant moisture brought by air currents from the Pacific Ocean. There are luxuriant, valuable forests of white, lodgepole, and ponderosa pine as well as western red cedar, grand fir, and Douglas-fir.

Northern Idaho and western Montana towns are relatively small service or manufacturing centers located in mountain valleys. Agriculture, forest products, recreation, or mining usually are the dominant industries. Businesses and ranches depend on a mix of private, State, National Forest System, and other public lands for all of their natural resources.

Eastern Montana and western North Dakota towns are widely scattered, small, agricultural service centers. A good secondary road network ties the small towns to the major service and financial centers of Great Falls, Billings, and Bismarck. Low-standard or unimproved roads serve the areas around the towns, and access to public land is difficult. Businesses in towns and ranches depend on a mix of private, State, or Federal lands, but their dependence on National Forest programs is less than in northern Idaho and western Montana.

Distances are long between population centers in the Region and transportation costs are high.

National Forest System

The Forest Service is charged with managing the Region's National Forests and National Grasslands on a multiple use basis, assuring that they yield commodity products such as wood, forage, water, and minerals, as well as noncommodity resources such as recreation, fish, wildlife, and wilderness. Forest Service programs also include protection and management of conservation and utilization programs for all renewable resources in the National Grassland areas. This includes:

- Promoting development of grassland agriculture and sustained yield management of the forage, fish, and wildlife, timber, water, and recreation resources.

- Demonstrating sound and practical principles of land use and resource management.

- To the extent feasible, integrating the Federally owned land with the associated private and other public lands into natural management units which will favorably influence development of sound land conservation and utilization practices.

The location of the National Forest System lands in the Northern Region is shown in figure I-1 at the beginning of this document. These lands contribute significantly to the social and economic base of the Northern Region.

State and Private Forestry Programs

Approximately 35 percent of the commercial forest land in Region 1 is in State and private ownership, and the land contributes greatly to meeting demands for timber and related resources. Much of the privately owned forest lands are on the more productive sites in the Region. The importance of State and privately owned forest lands will continue to grow as population growth and other factors increase the demand for forest resources.

The Northern Region's State and Private Forestry programs (S&PF) offer financial, technical, and related assistance to State forestry organizations and others to support improved forest resource management, utilization, protection, and planning for State and private lands. Forest Service programs include:

-- rural forestry assistance on non-Federal forest lands;
-- tree insect and disease management on all lands;
-- urban forestry assistance;
-- rural fire prevention and control on non-Federal forest lands and other rural lands;
-- management and planning assistance to State Foresters or equivalent State officials; and
-- assistance to insure that new forestry technology and research results are promptly made available and implemented.

State and Private Forestry also includes programs funded by other Federal agencies but administered by the Forest Service, such as:

-- cost-sharing for reforestation and timber stand improvement (Agricultural Stabilization and Conservation Service);
-- watershed planning and restoration, and flood prevention (Soil Conservation Service);
-- rural and community fire protection (Farmers Home Administration);
-- resource conservation and development (Soil Conservation Service); and
-- river basin planning (Soil Conservation Service).

State forestry agencies are the principal delivery system for cooperative State and Private Forestry programs. The Cooperative Forestry Assistance Act (P.L. 95-313) is the basic legislation authorizing the Secretary of Agriculture to cooperate with and assist the States in implementing Federal programs affecting non-Federal forest lands.

Forest and Range Research Programs

A comprehensive Forest Service research program supports the management of the Region's forest and rangelands. Research includes a range of disciplines in the biological, physical, and social sciences that solve complex problems involving forest and related ecosystems and their relationship to urban and rural areas.

Research is conducted nationwide through a network of eight regional Forest Experiment Stations and the Forest Products Laboratory at Madison, Wisconsin. Field studies and laboratory research are done at 81 locations in the United States, Puerto Rico, and the Pacific Trust Islands. The basic research unit within a Station is the research work unit. Each unit operates under a work unit description (charter) for a period of up to 5 years. The charter may be revised or terminated prior to that time if research priorities shift.

National research planning provides (1) a guide for forestry research planning in the Forest Service, Science and Education Administration (SEA), and participating forestry schools as required by Title XIV of the Food and Agricultural Act of 1977; (2) the research portion of the RPA program; and (3) a guide for coordinating annual program development among the Forest Service, Cooperative Research of SEA, the university community, and others.

Research programs are planned jointly with the Nation's 61 forestry schools to promote more efficient use of research talents and facilities. The Forest Service in conjunction with the forestry schools and Cooperative Research of SEA conducted sreveral Regional and a national research planning session during 1977 and 1978 to identify research needs. This effort, which involved more than 1,000 research users, led to the publication of both national and Regional research plans. The plans resulting from USDA's research planning system formed the basis for development of the alternative 1980 RPA research programs.

For RPA purposes, the following criteria were used to evaluate the RPA research alternatives:

- Responsive to needs for which technology is inadequate

- Contributes to increased National productivity

- Responsive to National policies, particularly those enunicated by the Administration and Congress

- Relates to changes in demand for technology but recognizing that the course of research should not shift drastically from historically trends

In the 1980 Recommended RPA Program, reseach priorities were placed on:

- Improving wood untilization

- Developing more intensive forest management practices to increase the Nation's timber supply and to provide biomass for energy

- Providing new knowledge to deal with current and anticipated environmental issues such as range, arid land, wildlife management, and tropical forestry

- Increasing the land manager's stewardship capability in areas such as protection and pllution control

- Resolving problems identified through the Regional and Forest planning process

Research in the Northern Region is planned and conducted by the Intermountain and Rocky Mountain Forest and Range Experiment Stations, headquartered in Ogden, Utah, and Fort Collins, Colorado, respectively. Current Forest Service research programs in the Northern Region States of Montana, Idaho, North Dakota, and South Dakota are described below. Related research is also conducted in adjoining States by the Rocky Mountain and Intermountain Stations. In addition, research conducted by other agencies, other Stations, and the Forest Products Laboratory may be applicable to resource problems in the Northern Region.

In Montana, Forestry Sciences Laboratories are on the campuses of the University of Montana, Missoula, and Montana State University, Bozeman. The Northern Forest Fire Laboratory, one of three national fire research laboratories administered by the Forest Service, is west of Missoula. The Coram Experimental Forest provides field sites for much of the research. Studies deal with entomology, wildlife habitat, wilderness management, forest utilization and economics, fire behavior and effects, watershed and forest engineering, forest and range ecosystem classification, and engineering problems of surface mine rehabilitation.

In Idaho, Forestry Sciences Laboratories are at Boise and on the University of Idaho campus, Moscow. The Priest River and Deception Creek Experimental Forests in northern Idaho and the Boise Basin Experimental Forest near Idaho City provide field study sites for Station scientists and cooperators. Studies deal with silviculture, insects and disease, watershed management and water quality, wildlife and fish habitat, and revegetation of disturbed areas. Several studies combine research specialties to develop information for management of complex systems such as the Idaho batholith and the mixed species forests of north Idaho. A major cooperative effort with the University of Idaho is directed at intensive forest management research on the highly productive forest areas. Idaho is also the scene of several important cooperative watershed and engineering projects on the Nezperce and Boise National Forests.

In North Dakota, a Shelterbelt Laboratory is on the North Dakota State University campus, Bottineau. Studies deal with surface mine rehabilitation, silviculture, wildlife management, riparian habitats, and water yield and quality. Studies are underway to determine the use of naturally wooded draws by livestock, deer, and wintering species of nongame birds, and the type of management needed for regeneration of woody draws; to determine the effects of more intensive timber management practices on understory and overstory vegetation and water yield and quality in the Black Hills; and to develop refined techniques for revegetating mine spoils to enhance wildlife habitat.

Current research programs for the Intermountain and Rocky Mountain Experiment Stations are described below. Additional information is available from the Stations.

Research work units at both the Intermountain (INT) and Rocky Mountain (RM) Experiment Stations are continuing to conduct research applicable to the Northern Region. They are:

Rocky Mountain Station

Research Work Unit	Title
1252	Multi-resource Management in the Subalpine Montaine and Foothill Zones
1551	Forestry Practices in the Northern Great Plains
2109	National Fuel Inventory and Appraisal System
2110	Forest and Mountain Meteorology
2201	Forest Insects of the Rocky Mountains and Southwest
2205	Forest Diseases of the Rocky Mountains and Southwest
2251	Protection and Improvement of Trees in the Great Plains
4152	National Site (Land) Classification Systems

Research Work Unit	Title
4153	National Resource Analysis Techniques
4154	National Resource Inventory Techniques
4155	Remote Sensing for Renewable Resource Inventory and Land Management Evaluation
4251	Markets and Uses for Forest Resources
	Intermountain Station
1751	Ecology and Management of Aspen Lands in the West
1603	Mined-Land Reclamation in the Intermountain and Northern Rocky Mountain Regions
2201	Population Dynamics of the Mountain Pine Beetle
4101	Resources Evaluation
1752	Shrub Improvement and Revegetation
1651	Minimizing Nonpoint Source Pollution in the Northern Rocky Mountains
1208	Ecology and Silviculture of Rocky Mountain Douglas-fir and Ponderosa Pine Ecosystems
2204	Insects of Northern Rocky Mountain Forest Trees and Associated Wildland Shrubs
2206	Diseases of Natural and Nursery-Grown Seedlings in the Central and Northern Rocky Mountains
1451	Genetics and Pest Resistance of Rocky Mountain Conifers
1302	Quantitative Analysis of Forest Management Practices and Resources for Planning and Control

Research Work Unit	Title
1206	Silviculture of Cedar, Hemlock, and Grand Fir Ecosystems
1251	Silviculture of Northern Rocky Mountain Subalpine Forest Ecosystems
1903	Wilderness Management Research
1705	Ecology and the Management of Forest Wildlife Habitats in the Northern Rocky Mountains
1205	Forest Ecosystems
2101	Fire Occurrence
2103	Fire Behavior
2107	Fire Technology
2108/2110	Fire Effects and Use Research and Development Program
2108	Fire Effects and Use in the Interior West
2110	Synthesizing Fire Management Techniques
3251/3751/4201	Systems of Timber Utilization for Environmental Management (STEM) Research and Developement Program
3251	Improving Wood Resources Utilization in the Intermountain West
3751	Engineering Technology for Improved Forest Resource Management and Protection
4201	Economics of Multiple Use Management on Public Forest Lands

Future research planning will continue to be conducted under the auspices of Title XIV and the Renewable Resources Planning Act. Research needs identified through the State, Forest, and Regional Plans will be incorporated into future research planning. See the discussion of research coordination in chapter II.

RESOURCE PROGRAM ELEMENTS

RECREATION

Recreation Resources. The Northern Region has abundant opportunities for a variety of outdoor recreation activities, with over 4.5 million acres of wilderness and primitive areas; 570 miles of wild and scenic rivers; 70,000 miles of trails; and more than 800 developed sites, such as campgrounds, picnic grounds, boating sites, ski areas, and historical and geological areas.

From 1970 to 1980, recreation use in the Region grew 25 percent, from 9.8 million visitor days to 12.3 million. (See table IV-2.)

TABLE IV-2.--Recreation use by activity, F.Y. 1980.

Activity	1,000's of Recreation Visitor Days	Percentage
Mechanized recreation travel (automobiles and motorbikes)	3,205.2	26
Camping	2,666.8	22
Hunting	1,234.3	10
Fishing	931.0	8
Hiking and mountain climbing	638.6	5
Winter sports	583.8	5
Picnicking	481.5	4
Boating	415.8	3
Gathering forest products	380.1	3
Horseback riding	376.4	3
Interpretive services (talks, exhibits, etc.)	375.0	3
Recreation residence use	295.9	2
Viewing scenic, sports areas	172.6	1
Swimming and scuba diving	169.1	1
Nature study	140.1	1
Resort use	103.6	1
Organization camp use	80.2	1
Waterskiing and other water sports	48.6	*
Games and team sports	27.2	*
TOTAL	12,325.8	

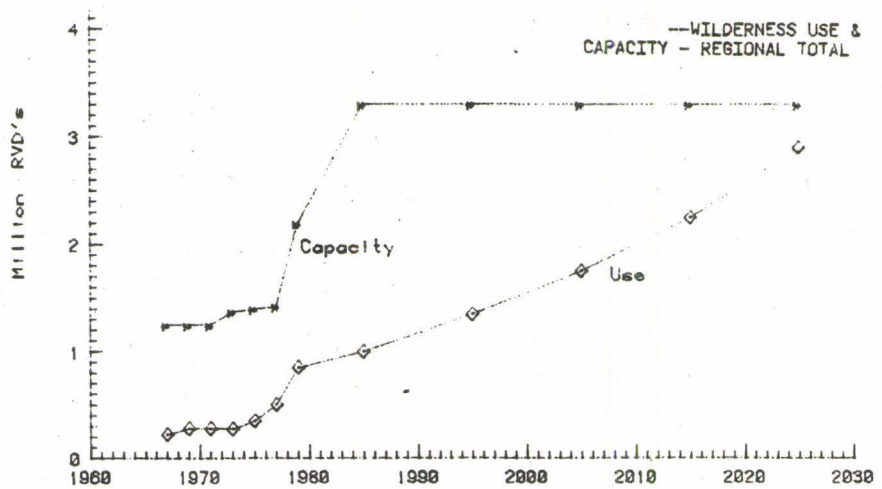
Although total use in the Region grew about 25 percent from 1970 to 1980, mechanized recreation travel grew only half that fast while hiking and mountain climbing grew at almost double that rate (36 percent). Even without the Forest Service's active promotion of energy-efficient forms of recreation, likely trends for the future include: (1) increasing length of stay at recreation sites; (2) decreased day use at more distant destinations; (3) increased impact and use at areas near population centers; and (4) diminished participation in high-energy-use forms of outdoor recreation.

Support facilites, like trails and developed campgrounds, are maintanined at various levels depending on site design and use level. The public is informed of recreation opportunities through informational material available at such off-site locations as Forest Service offices, libraries, Chambers of Commerce, and tour bureaus.

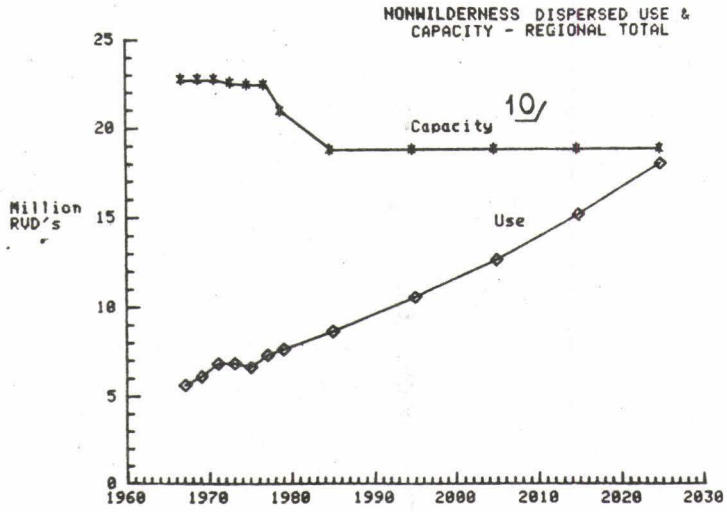
Corresponding to increased recreation on the Forests, tourism has become a major industry in northern Idaho and Montana. The National RPA Assessment projected recreation would increase 50 percent between 1979 and 2025. However, if recreation use keeps pace with expected increases in the Northern Region population, total use in 2025 will be not 50 percent, but 145 percent more than in 1979. Much of the in-migration in northern Idaho and western Montana is attributable to the scenic beauty, rural setting, and outdoor recreation opportunities of the area.

Private lands have significant developed and dispersed recreation opportunities and use, which are covered in State comprehensive outdoor recreation plans. Private lands are generally more accessible, lower in elevation, and more favorably situated by rivers and lakes. Developed recreation sites include campgrounds, dude ranches, cabins, and fishing ponds. Dispersed recreation by the public on these lands, however, is being increasingly restricted.

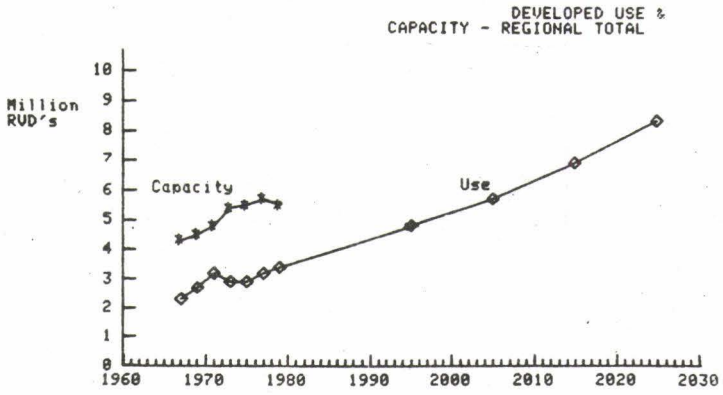
Although projections must be viewed with caution, certain broad trends can be discerned. By 2030 wilderness use will probably increase by more than 500 percent in Idaho, nearly 400 percent in western Montana, and 100 percent in central/eastern Montana. Wilderness recreation areas will be used nearly to capacity by the year 2030.



Patterns of nonwilderness dispersed recreation use in northern Idaho have been variable, but overall they show a slight upward trend. However, nonwilderness dispersed recreation in the rest of the Region showed strong increases--more than doubling in the Dakotas and more than tripling in western Montana--leading to an expected increase of 235 percent throughout the Region. According to the analysis, nonwilderness dispersed recreation demand can be met until the year 2030.



Use of developed sites is expected to rise at a brisk rate as well, with increases of about 250 percent by 2025. Developed site capacity in the Region is adequate to meet expected future use until the year 2000. However, some sites have maintenance and rehabilitation needs and if these needs are not met, overall site capacity could be reduced.



Under the Region's current program, developed recreation, which comprises 29 percent of the recreation use, receives about 63 percent of the recreation management funds. Dispersed recreation, which constitutes 71 percent of the use, receives less than 37 percent of the funds.

10/ Nonwilderness dispersed capacity declines because of a shift of acreage from nonwilderness to wilderness classification.

Visual Resources. Across the Region landscapes vary considerably in visual diversity. About 25 percent of the land is considered of "distinctive" quality, 65 percent as "common," and only 10 percent as "minimal" in visual quality. Thus, a significant portion of the Region has high scenic value, for the Nation as well as for the Region.

Of the 25 percent in "distinctive" landscapes, 19 percent are in wilderness. These areas are managed for a visual quality objective of preservation, which provides for natural change through succession only. The other 6 percent are classified as retention, which directs that management practices will not be visually evident.

Cultural Resources. Management of cultural resource is another important part of the recreation program. Cultural sites in the Northern Region are about evenly divided between prehistoric and historic origin. Many sites have been found, and are continuing to be found on National Forest land. The earliest evidence of human populations in the Region dates back about 10,000 years. In prehistoric times, the gradual migration and diffusion of peoples in North America occurred generally from north to south. The arrival of Europeans in the east began the great displacement and migration of groups westward, such that tremendous changes in territorial boundaries were accomplished in only 300 years.

As a consequence, tribes east of the Continental Divide are relatively recent arrivals to the Region. Most of the tribes now in eastern Montana, for example, did not come until after 1800. In western Montana and northern Idaho, on the other hand, anthropologists can account for the Kootenai, Pend d'Oreille, and Flathead tribes for the past 400 years. These movements also make it a challenge to correctly identify the many prehistoric cultural sites in the Region.

Recorded history in the Northern Region began with the arrival of the white man. Highlights of the early history are the fur trade, which flourished in the early 19th century, and the famous Lewis and Clark Expedition of 1804 to 1806. Later came mining claims, mining and logging towns, ranching, and railroad empires. Physical remains of this rich history and significant geographic sites are also on Forest Service land.

Inventories of cultural resources within the Region are currently incomplete, so that determining the significance of a site is difficult. Consequently, most sites are preserved intact.

As funds and personnel are available, the Forest Service has been nominating significant historical sites for the National Register of historical places.

WILDERNESS

The primary mission of this resource element is to secure the benefits of an enduring resource of wilderness by assuring that suitable, needed and available National Forest System lands will be designated for preservation and protection in their natural condition. National Forest System wilderness areas are administered for the use and enjoyment of the American people so as to leave the resource unimpaired for future use and enjoyment, to preserve their wilderness character, and to provide for the gathering and disseminating of information regarding their use.

Existing and endorsed National Forest wilderness in the Northern Region totals 5.9 million acres. Fourteen areas consisting of 4.8 million acres are now in the National Wilderness Preservation System; other areas totaling 1.1 million acres have been administratively endorsed for wilderness through the RARE II process and are now before Congress for action. Through 1985, several additional areas totaling 1.1 million acres will be studied by the Forest Service for possible recommendation as additions to the wilderness system. See chapter 2, Regional Management Direction, for the names of these further planning areas, their individual net acreage, and the National Forest that will be studying each.

The Region also contains about 75,000 acres of designated wilderness and 1.2 million acres administratively endorsed for wilderness that are administered by other agencies.

The 4.8 million acres of the classified wilderness system provided about 936,000 recreation visitor days (RVD's) in 1980. This wilderness system could support a maximum of 2.4 million RVD's.

The 1.1 million acres endorsed by the Administration for wilderness could support an additional 0.5 million RVD's, bringing the total of potential RVD's for Forest Service Northern Region wildernesses to approximately 3 million. If any of the areas to be studied through 1985 are recommended and endorsed for wilderness, the capacity for recreation visitor days will increase further.

WILDLIFE AND FISH

The Northern Region supports abundant fish and wildlife, in terms of the number of species as well as numbers within each species. They reside on Federal, State, and other public lands as well as private lands within the Region.

The Northern Region coordinates with the States on fish and wildlife matters (CFR 219.12(g)(3)). The State of Idaho Department of Fish and Game and the State of Montana Department of Fish, Wildlife, and Parks have adopted population goals for various fish and wildlife species. The tables in appendix B show these goals disaggregated to the National Forests. Forest plans will evaluate these goals as well as alternative goals in reaching a preferred alternative.

In order to assist in the development of Forest Plans, the Region has identified management indicator species for all habitat types in the Region (USDA-Forest Service, 1980c). Forests will be able to select from this list the management indicator species needed for their respective management situation.

The Region has recommended essential and critical habitat for federally listed threatened and endangered species. In addition, desired population levels (U.S. Fish and Wildlife Service tentative recovery goals) have been proposed for the grizzly bear and wolf. See the tables in appendix B. The existing situation for different groups of wildlife is discussed below.

Threatened and Endangered Species. About 9.3 (37 percent) of the 25 million acres in the Region are occupied by threatened and endangered species (table IV-3). Threatened and endangered plant and animal species are identified by the U.S. Fish and Wildlife Service, as defined by the Endangered Species Act of 1973.

Endangered species in the Region are the gray wolf, black-footed ferret, peregrine falcon, and bald eagle. The grizzly bear is a threatened species. No plant species in the Region have been identified as endangered or threatened.

The Northern Region's contribution to the recovery of the grizzly bear and gray wolf is of national significance since a majority of the habitat for those species is within this Region. Grizzly bear relocation can occur if approved by Forest Supervisors and if the Regionally approved procedure (FSM 2633.4, R-1 Supplement No. 43) is followed. The Endangered Species Act guides the Federal Government in the protection, enhancement, and recovery of these species. Recovery goals are set by the U.S. Fish and Wildlife Service in coordination with the Forest Service and other land management agencies.

TABLE IV-3.--Northern Region threatened and endangered species habitat.

Species	Status	Location	Acres of occupied habitat	National Forest percentage of total known habitat occupied	Significance of NF lands to recovery effort
Grizzly bear	Threatened	Northern Idaho Montana	7,973,900	45%	Major
Gray wolf	Endangered	Northern Idaho Montana	5,406,000	82%	Major
Black-footed ferret	Endangered	Central and Eastern Montana North Dakota	650	Unknown	Minor
Peregrine falcon	Endangered	Northern Idaho	418,200	Unknown	Moderate
Bald eagle	Endangered	Entire Region	853,000	Unknown	Moderate

Sensitive Species. South Dakota and Idaho have recorded the following species on official State Threatened and Endangered Species lists.

State List	Species	Classification
Idaho	Mountain caribou	Threatened and endangered
South Dakota	Interior least tern	Endangered
	Buff-breasted sandpiper	Threatened
	Mountain lion	Threatened
	Northern swift fox	Threatened
	Osprey	Threatened
	River otter	Threatened
	Sturgeon chub	Threatened

As Forest and project plans are developed, the Forest Supervisors will develop habitat management prescriptions to insure the protection of sensitive species habitat, will evaluate the effect of proposed management activities on these species, and will conduct needed monitoring of habitat and population trends (FSM 2670). See the tables in appendix B.

Big Game. Big game includes elk, mule deer, whitetail deer, moose, bighorn sheep, antelope, and mountain goat. Table IV-4 gives the estimated population levels of big game for the States in the Region.

TABLE IV-4.--Existing big game populations on National Forest System Lands in Idaho, Montana, North Dakota, and South Dakota.

Big game species	Idaho	Montana	North Dakota	South Dakota	Total
	- - - - - - - - animal numbers - - - - - - - -				
Elk	21,350	70,000	-	-	91,350
Mule deer	18,440	121,560	15,000	1,000	156,000
Whitetail deer	26,450	55,550	5,000	900	87,900
Moose	770	4,970	-	-	5,740
Bighorn sheep	350	2,650	150	-	3,150
Antelope	-	3,200	1,000	200	4,400
Mountain goat	460	1,650	-	-	2,110

Demand for big game species has increased not only for hunting and fishing, but also for esthetic purposes. Future demand for big game and fish populations has been expressed in State fish and game agencies' plans. State population goals for 1995 are intended to satisfy the increasing demand (table IV-5).

TABLE IV-5.--Estimated disaggregation of desired big game populations for 1995 to the National Forest System.

Big game species	Idaho	Montana	North Dakota	South Dakota	Total
	- - - - - - - - animal numbers - - - - - - - -				
Elk	34,160	91,200	-	-	125,360
Mule deer	27,000	159,000	25,000	1,000	212,000
Whitetail deer	29,400	59,500	7,000	900	96,800
Moose	820	5,260	-	-	6,080
Bighorn sheep	490	2,870	1,000	-	4,360
Antelope	-	3,400	2,000	250	5,650
Mountain goat	500	1,900	-	-	2,400

Cavity Nesting Birds. In the Northern Region, 46 species of birds rely on dead or partially dead trees for cavity nesting. About 60 percent of these birds are insectivores and are important in maintaining balanced ecosystems. Resource management activities, such as fire and timber management, and public access for firewood gathering and recreation can affect the deadwood or snags on which the birds depend.

Other Wildlife. Small game in the Northern Region includes sharptail, prairie, blue, Franklin, and ruffed grouse; pheasants, chukar and Hungarian partridge; ptarmigan; jack and cottontail rabbits; and snowshoe hare. Since both the Central and Pacific migratory waterfowl flyways pass through the Region, there are many varieties of ducks and geese.

Furbearers include beaver, muskrat, bobcat, lynx, fisher, marten, wolverine, fox, mink, weasel, coyote, and mountain lion.

In addition, there is an abundance of smaller animals, birds, reptiles, and amphibians.

Freshwater Fish. The waters within the National Forests in the Northern Region contain several species of cold water fish. There are nine major species of salmonids, of which rainbow and cutthroat trout are the greatest in number. A nonsalmonid example is the northern pike.

Currently, the Northern Region National Forest System (NFS) lands provide 966,000 recreation visitor days (RVD's) annually for cold water fishing. Fish harvest associated with this use is estimated at 5,794,000 fish. Idaho and Montana use and harvest levels are:

Cold water fishing	Recreation use (RVD's)	Fish harvest (number of fish)
Idaho	402,000	2,412,000
Montana	564,000	3,382,000

In the future cold water fishing demand is expected to increase. As listed below, Idaho and Montana State Fish and Game goals reflect this increase in stating that the NFS lands by 1990, 1,285,000 RVD's will be needed with an associated harvest of 8,879,000 fish.

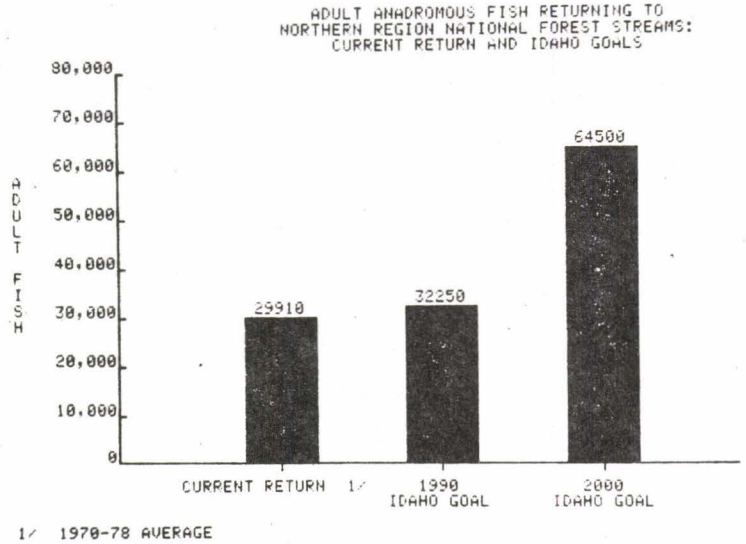
Cold water fishing	Recreation use (RVD's)	Fish harvest (number of fish)
Idaho	535,000	3,690,000
Montana	750,000	5,189,000
	1,285,000	8,879,000

Warm water species include perch, crappies, bluegills, and small- and large-mouth bass. Stream species unique to this Region include the sturgeon and the paddlefish.

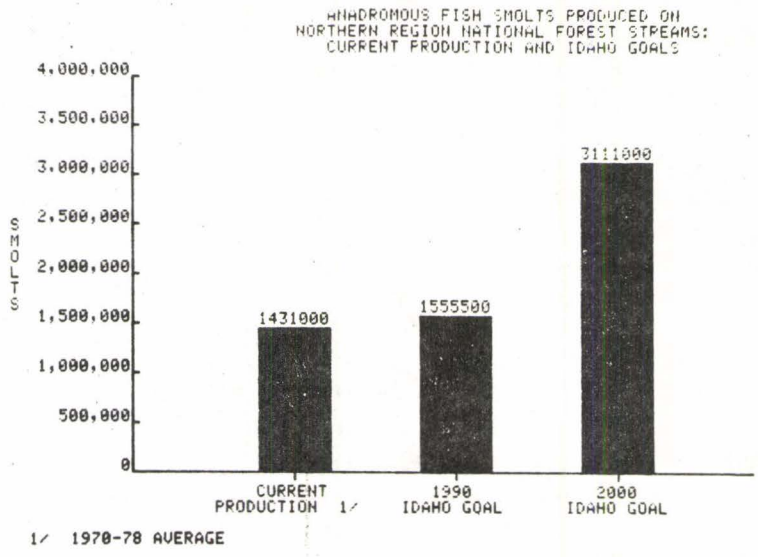
Anadromous Fish. Anadromous fish species mature in the sea and migrate into streams to spawn. Chinook salmon and steelhead are the primary anadromous fish species in the Region. They reside in the Columbia River Basin from Idaho west to the Pacific Ocean.

The Northern Region provides about 23 percent of the total Forest Service Columbia River Basin spawning and rearing habitat. This habitat is in Idaho on the Clearwater, Nezperce, and portions of the Bitterroot National Forests.

The Region's current production, as well as the Region's estimated disaggregation of Idaho State Fish and Game Department's desired goals for 1990 and 2000, are shown in the following bar graphs:



1/ 1970-78 AVERAGE



The State goals for the year 2000 approximate the Region's biological potential. Biological potential is estimated from the amount of suitable habitat, as well as the maximum miles and acres of streams available to anadromous fish. The most important factors influencing potential production are downstream dam management, stream barriers, and sediment from land management activities that could affect spawning and rearing habitat.

RANGE

Range includes all land producing native forage for animal consumption, as well as lands revegetated naturally or artificially to provide forage cover that is managed like native vegetation. Range includes all rangeland and those forest lands capable of providing forage for grazing and browsing animals. Forage includes herbage and browse produced as food for wildlife and livestock, habitat for wildlife, and ground cover protecting the soil.

Three broad types of range provide forage: rangeland, forested range, and transitory range. Rangeland is land on which the natural plant cover is composed principally of native grasses, forbs, or shrubs valuable for forage. About 5 million acres of rangeland are located in central and eastern Montana and North Dakota. Forested range is land on which grasses, forbs, and shrubs are an integral part of the forest plant community and provide forage for grazing and browsing animals. Forested range covers about 19 million acres in Montana and northern Idaho.

Transitory range is created once the Forest canopy is removed by timber harvest or fire. Forage production increases and is capable of sustaining grazing and browsing use until the canopy closes and forage production decreases. Transitory range is located primarily in western Montana and northern Idaho.

Some 15 million of the 25 million acres in the Region's National Forest System produce over 100 pounds of forage per acre per year. About 4 million of these acres are currently grazed by livestock; approximately 1.4 million livestock AUM's are produced, much of it in central and eastern Montana and portions of North and South Dakota.

Virtually all of the 15 million acres of Forest Service land suitable for wildlife grazing and browsing is used by wildlife to some degree. According to Regional estimates, about 1.2 million AUM's of wildlife forage are produced. In central Montana along the Continental Divide, rangeland on the National Forests supports elk herds of national significance.

Region-wide, the 1.4 million livestock AUM's and 1.2 million wildlife AUM's represent use of 53 percent of the total potential forage.

The remaining portion is either currently present but not being fully utilized for some reason (for example, browse created by timber harvest which is too far from water to be of practical use), or could be present over time with improved management practices or capital investment (for example, fencing to better distribute grazing use). About half of the available unutilized portion is in transitory range in the western part of the Region. Some of this would be used by increased big-game populations.

The economies of the Regional analysis areas are related to the three broad types of range. The eastern portion of the Region, especially the National Grasslands, where much of the rangeland is found, is oriented toward commercial livestock production. In central Montana, ranches are dependent on National Forest System range to round out their ranching operations. In northern Idaho and western Montana, where much of the transitory range is found, most livestock ranching is important as supplementary income to families whose major income comes from other sources. Ranches which depend on grazing of National Forest System lands are well established, stable family operations and have held grazing permits for several generations.

TIMBER

There are 24 million acres of public and private forest land in the Northern Region capable of growing at least 20 cubic feet of wood per acre per year.

This commerical timberland is composed of: National Forests, 57 percent; other Federal agencies' land, 6 percent; State land, 5 percent; nonindustrial private owners' land, 25 percent; and forest industry lands, 7 percent. In general, the private forest ownerships are lower in elevation; hence warmer and more productive.

The total timber harvest from all ownerships in the Northern Region averaged 2.438 billion board feet per year between 1969 and 1978. It was highest in 1978 at 2.622 billion board feet and lowest in 1975 (bottom of low timber market cycle) at 2.240 billion board feet. Overall, there were remarkably stable year-to-year harvest levels in this period.

Other public ownerships (Bureau of Land Management, Bureau of Indian Affairs, and State) slightly increased their proportion of the total cut, from 9.4 percent in 1969 to 11.6 percent in 1978. The biggest shift was between the Forest Service and private timberland ownerships. National Forest harvests declined significantly to 38.1 percent of the total by 1978 as shown in the following tabulation:

Percentage of Total Harvest by Ownership

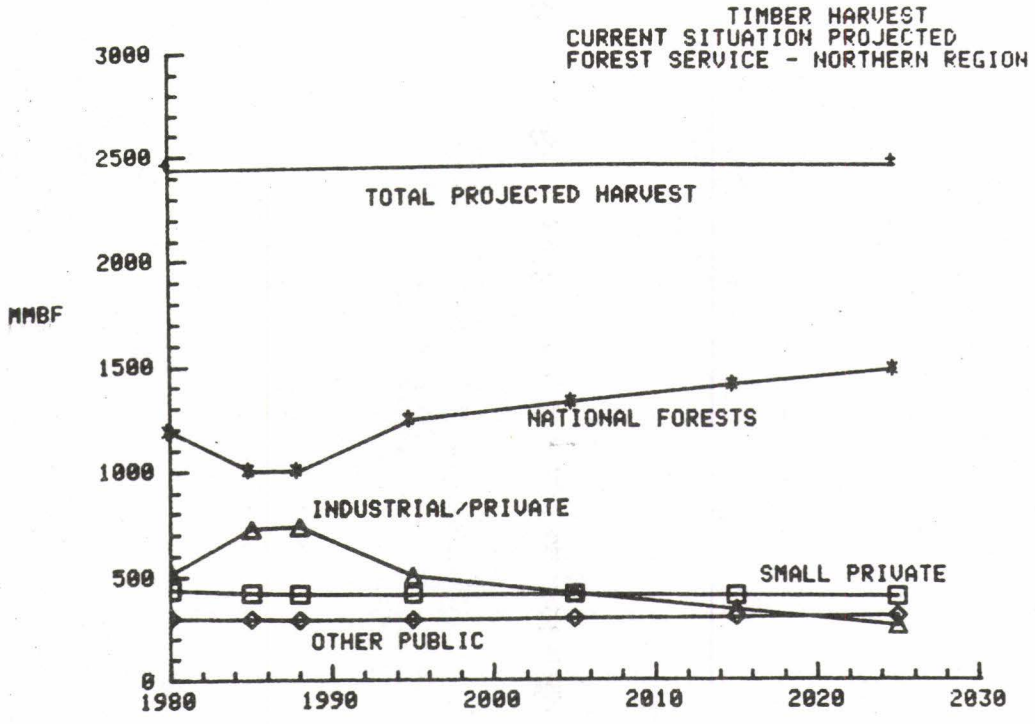
Calendar year	National Forest	Other public	Private	Total percent	Total volume harvested (billion board feet)
1969	57.6	9.4	33.0	100.0	2.647
1973	45.0	12.3	42.7	100.0	2.301
1978	38.1	11.6	50.3	100.0	2.622

Private forests provided 50 percent of the total harvest in 1978 from 32 percent of the total commercial forest land base, whereas National Forests provided 38 percent of the harvest from 57 percent of the total commercial forest land.

The commercial forest land base in the Region has been declining as shown in the following table:

Commercial Forest Land (MM Acres)

Calendar year	National Forest	Other public	Private	Total
1969	15.9	--Data not available--		
1975	13.3	2.6	7.2	23.1
1979	12.8	2.6	7.2	22.6



Demand for wood from the Northern Region is expected to increase throughout the planning period. While some expect that supply (harvest) will be able to increase accordingly, experience in the Region has shown that total Regional harvest has historically remained stable despite wide variation in price. The figure above projects future timber harvest levels in the Northern Region by ownership. If total supply remains stable or even declines despite increases in demand, prices will be driven up. Increased National Forest harvest levels in the future will help moderate these stumpage price increases by helping to maintain total supply.

Meeting national timber harvest programs assigned to the Region requires reversing a declining trend which started in 1967. The Region can meet assigned objectives in the immediate future. However, to meet the long-term objectives, the Region will need to assure (1) that tradeoff allocation problems have been solved and opportunities for departures have been addressed, (2) that capital investments for road access have been made so that timber can be harvested from previously undeveloped lands, (3) that identified research needs have been addressed, (4) that continuing support be given to a policy of developing, practicing, and encouraging the use of integrated pest management methods, systems, and strategies to provide protection of forest resources with the least hazard to people, their possessions, wildlife, fish, and the environment, and (5) that more intensive use be made of insect-, disease-, and fire-killed timber.

Since 1975, several studies have raised questions concerning the Region's capability to maintain current timber harvest levels with irregular and largely unknown capital investment expectations. One such study concluded that access development to commercial forest land was

occurring at less than one-half the rate used in establishing the annual allowable sale quantity 11/. This delay has a long-term effect on growth and yield by deferring (1) reforestation of nonstocked commercial forest lands, (2) thinning of precommercial pole stands in undeveloped areas, and (3) salvage of sawtimber mortality and early regeneration.

Currently, about 60 percent of the Region's commercial forest land has a road network sufficient to support timber sale offerings and production. Only 15 percent of the lands classified as special or marginal has a similar road network. About 20 percent of the Region's timber sale offerings (225 MMBF) depends on capital investment for roads. The remaining access (80 percent) is financed through credits to purchasers against timber sale stumpage values.

In the future, it will be necessary to shift timber harvest to underaccessed or unaccessed commercial forest land if the Region's timber harvest is to be sustained. How this shift would occur is projected below.

Percentage of Harvest Volume

	1985	1995	2000	2020	2030
Presently accessed commercial forest lands	80	60	40	30	40
Presently unaccessed commercial forest lands	20	40	60	70	60

Based on the above allocation of harvest to unaccessed commercial forest lands, the amount of direct Federal access investments would need to be increased at least threefold during the next decade to maintain essentially the current (1980) harvest level.

It is also important that State and Private Forestry programs continue to provide forestry assistance to small, private, nonindustrial forest landowners and offer sawmill improvement and improved harvesting programs to the forest industry upon request so that future wood fiber demand can be met.

WATER

While this Region is in general one of the driest in the country, there is great variation. Northern Idaho with its forested mountains averages 40 to 60 inches of rainfall per year, while the western Dakota grasslands average only 10 to 20 inches per year. Lakes and streams in the western mountainous area as well as the Missouri and Columbia Rivers support fish and wildlife and are the focal points for many outdoor recreation activities. They also provide most of the water available for the Region's domestic use and irrigation.

The following discussion of water is divided into four parts: water quality, water rights, riparian areas, and ground water.

11/ USDA-Forest Service Idaho Panhandle National Forests 2410/7710 white paper, February, 1980, IPNF Timber Harvest Program Analysis and Evaluation, Vol. I.

Water Quality. Most of the water in the Region is of high quality. The need to maintain this high water quality is reflected in the passage of the Federal Water Pollution Control Act as amended by the Clean Water Act of 1977.

This Act authorizes the States to assume the responsibility for maintaining water quality, within established Federal guidelines. Since the headwaters of many streams are located on National Forests, the Forest Service cooperates with the States in maintaining water quality through the application of Best Management Practices.

Technical and financial assistance in river basin planning and small watershed projects is also provided through the State and Private Forestry Program.

Water Rights. Water quantity and supply is as important as water quality. Within the Northern Region, two water resource subregions in central and eastern Montana (the Missouri-Marias and the Yellowstone) have the highest annual average percentage depletion of their water supply, reflecting the widespread use of irrigation which is the largest consumptive use of water. However, no major problems in water supply are expected in any of the subregions within the Northern Region.

The present and anticipated future water uses on the National Forests and Grasslands for which water rights are important are:

Domestic-Household	Fish and Wildlife
Domestic-Recreational	Power
Recreation	Instream
Stock water	Flood Control
Irrigation	Forest Improvement or Protection

There may be additional water uses not identified above that could be identified by Forest Plans.

The Forest Service is presently filing for water rights in Idaho, Montana, North and South Dakota. In Montana, the Forest Service is negotiating for present and anticipated future water uses.

Riparian Areas. Riparian areas are a relatively small portion by total area (8 to 10 percent) of the National Forest land in the Northern Region, but they sustain life, attract people, and produce resources in quantities disproportionate to their small area. Under the State and Private Forestry Program, the State of Montana is in the process of establishing Best Management Practices (BMP's) for riparian areas. On the Lolo and Helena National Forests, two demonstration allotments are being established to illustrate proper management practices in riparian areas.

The objective of the Forest Service policies for riparian areas is to recognize their unique values and to emphasize their protection, management, and improvement during the planning and implementation of land and resource management activities.

Ground Water. The objective of Forest Service policy regarding ground water is to insure that the availability, quality, quantity, and extent of ground water are considered in the development and utilization of other resources, foremost being range and recreation.

MINERALS

Minerals and geologic resources in the Region include energy and non-energy minerals; earth construction materials; and ground water. Of critical importance today is the energy minerals group, with oil, gas, coal, uranium, and geothermal resources. The existing situation for specific mineral and geologic resources is discussed below.

Oil and Gas. Potential oil and gas on National Forest System land in the Region has been estimated at $14X10^{15}$ (quadrillion) Btu's or the equivalent of 2.4 billion barrels of oil. Oil and gas reserves on National Forest System lands are only a small part of the Region's total reserves estimated at $72X10^{15}$ Btu's.

Coal. Known strippable coal reserves in Montana and North Dakota are approximately 42 and 16 billion tons, respectively. Strippable reserves are the most likely to be mined first.

The Ashland Division of the Custer National Forest contains approximately 6 billion of the 42 billion tons of known strippable reserves in Montana. The little Missouri Grasslands contain approximately 1 billion of the 16 billion tons of known strippable reserves in North Dakota.

A great portion of the two strippable coal areas are underlain by coal at depths which may have future potential for in situ gasification. However, little is known about the potential for this process at the present time, and it is not expected to play a significant role in energy production through 1995.

Geothermal. The most favorable geothermal areas are in western Montana, particularly in the Boulder batholith of southwestern Montana. The identified and undiscovered resources for the Boulder batholith are estimated, respectively, at approximately $11X10^{15}$ and $55X10^{15}$ Btu's. The portion of estimated geothermal resources on National Forest System lands is not known.

Uranium. Uranium sources are widespread in the Region, ranging from basin deposits (often associated with coal) in the eastern part to deposits associated with granitic rocks of the Boulder and Idaho batholiths in the western part. Although only limited exploration is currently underway for uranium, development could occur in the next 15 years.

Nonenergy Minerals. Nonenergy minerals of domestic significance which occur in the Northern Region are shown on table IV-6 along with their potential for development. Nonenergy mineral resources will be assessed in Forest Plans along with the probable effect of renewable resource allocations on mineral resource management. 11/

Earth Construction Materials. Sand, gravel, and stone are among the most widely used geologic resources. The Forest Service Northern Region uses in excess of 2 million tons of pit run and quarried material a year on road construction. In addition to Forest Service use, earth construction materials are available through permits to the general public and industry. To date, this use has been minimal.

11/ USDA-Forest Service Northern Region memorandum, April 1, 1981, Guidelines for Meeting the Minimum Requirements for NFMA Regulations CFR 219.12(j)(1-5) - Minerals Recognition and Consideration.

TABLE IV-6.--Known occurrence of minerals and potential for development in Northern Region.

Minerals a/	National net import reliance b/	Regional analysis areas c/ N ID	W MT	C&E MT	ND
Antimony	43	D	D		
Asbestos	85			O	
Barite (barium)	40		O	O	
Bauxite & other aluminum sources	93	O	O	O	O
Bentonite (clays)	E			O	
Beryllium	W	O	O		
Bismuch	W	O	O		
Chromium	90			D	
Cobalt	90	O			
Columbium	00		O		
Copper	13	D	D	O	
Fluorspar	W('78=82%)		O		
Gold	56	D	D	D	
Graphite	W		O	O	
Ilmenite & rutile	46	O	O		
Iron ore	28			D	
Lead	8	O	O	O	
Manganese	98			O	
Mercury	62			O	
Mica (natural sheet)	100			O	
Nickel	77			D	
Phosphate	E		D	D	
Platinum group	88			D	
Silver	45	D	D	D	
Tantalum	96		O		
Tellurium (copper byproduct)	W	O	O	O	
Thorium	NA	O	O	O	
Tin	81		O		
Tungsten	59			D	
Vanadium	25	O	O	O	
Zinc	62	O	O	O	
Zirconium & associated hafnium	W	O	O		

a/ "Minerals of Compelling Domestic Significance," USDI-Bureau of Mines, WO 1950/2800 letter to Regional Foresters, dated Sept. 1, 1978.

b/ Figures are from 1979 data (Mineral Commodity Summaries, USDI-Bureau of Mines, 1980) as a percentage of total domestic consumption from foreign sources. E = net exporter; W = withheld information.

c/ Region 1 status by Regional analysis area. N ID = northern Idaho, W MT = western Montana, C&E MT = central and eastern Montana, ND = North Dakota. O = known occurrence; D = existing production or potential for development in 15 years.

HUMAN AND COMMUNITY DEVELOPMENT

The Northern Region is involved in two categories of Human Resource Programs. Sponsored programs include Job Corps (JC), Youth Conservation Corps (YCC), Young Adult Conservation Corps (YACC), and the Senior Community Employment Program (SCEP). For sponsored programs, funding is appropriated by Congress and allocated either directly or indirectly to the Forest Service. Hosted programs are those for which the Forest Service receives no funding but provides a worksite and other support, such as supplies and transportation. Hosted programs include enrollees under the Comprehensive Employment and Training Act of 1973 (CETA), college work-study, and volunteers in the National Forests.

For F.Y. 1980, the Region had the following sponsored programs:

Human resource programs	No. of projects, camps, centers	No. of funded enrollee positions	Cost	Value of work performed
			--thousands of dollars--	
YACC	18 a/	283	$4009	$3677
YCC	26	550	652	936
SCEP	--	90	420	544
JC	2	448	4300	1488
Total		1,371	$9381	$6645

a/ Eighteen camps, which existed until May 30, were reduced to four for the remainder of F.Y. 1980.

Individuals who occupied the funded positions totaled approximately 3,200 in F.Y. 1980; length of enrollment varies, so enrollees exceed the number of positions.

Some 1,517 enrollees were in the hosted programs (CETA, college work-study, volunteers). The preceding figures do not include nearly 300 staff positions for administering the sponsored and hosted programs.

In addition, State YACC and YCC programs receive funds from the Forest Service and Department of Interior, which jointly administer and monitor the grants.

SUPPORT PROGRAM ELEMENTS

PROTECTION

Fire Management. Fire management in the Northern Region includes traditional activites of fire protection, such as fire prevention, fire detection, fire training, fire suppression, fire law enforcement, and damage appraisal. However, fire management has additional dimensions in fuel management, which includes activities such as slash disposal, and also in prescribed burning for wildlife habitat improvement and prescribed natural fires from natural ignitions in fire management areas.

Fire management in the Region's National Forests is complicated by large roadless areas which require an emphasis on air delivery capability and highly trained manpower rather than on ground machinery such as tractors. State fire protection agencies, on the other hand, are oriented toward ground systems of tankers, bulldozers, and highly trained crews supplemented with aircraft.

The Northern Region's State and Private Forestry Program cooperates with the States to provide technical and financial support for fire prevention and control on the following number of acres:

States	Acres
Idaho	7,126,690
Montana	25,866,452
North Dakota	200,000
Total	33,193,142

The National Forest System is solely responsible for fire protection on the following acres:

States	Acres
Idaho	7,468,605
Montana	19,085,571
North Dakota	1,105,549
Washington	125,119
South Dakota	233,197
Total	28,018,041

National Forest fire management in North Dakota occurs primarily through fire suppression agreements whereby grazing associations provide most of the protection as a condition of their grazing permits.

In northern Idaho and western Montana, forests are periodically plagued with epidemic levels of insects and diseases, which kill trees and increase the fire hazard many times over that of healthy timber stands. Mortality often is in roadless areas and steep terrain, so salvage logging and subsequent slash disposal are not available to reduce the hazard. Thus the stage is set for serious fire problems. Exceedingly large burns from the past (1910 for example) are still plainly visible on the landscape. The climate of Montana becomes increasingly semiarid east of the Idaho border, and droughts lead to major fire problems about 4 out of 10 years.

Insects and Disease. Mountain pine beetle currently is epidemic on 2.3 million acres in the Region (USDA-Forest Service, 1981). Populations are building rapidly in many stands of lodgepole, ponderosa, western white, and whitebark pines. The trend will persist until most susceptible stands have been depleted or until stands have become "beetle resistant" through silvicultural treatments.

Forest Service current direction is: (1) For the short term (next 3 to 5 years), prevent or at least substantially mitigate through silvicultural treatment the development of epidemic infestations of mountain pine beetle in extensive, currently infested, and high-hazard lodgepole pine stands; (2) Over the longer term (next 6 to 16 years), convert extensive single-age stands (through carefully scheduling regeneration harvest) into an age/acre/size distribution to allow harvest sched-ules in the next rotation which will (a) prevent development of stand conditions that favor insect population buildup to epidemic levels, (b) allow for quick and effective silvicultural treatment (intermediate treatments or regeneration harvests) to manage any developing epidemic insect populations; (3) Increase overall utilization of wood fiber and avoid potential loss of stumpage value by harvesting infested and threatened stands while they are still green rather than following the usual practice of salvaging dead, damaged, and devalued timber after epidemic infestations have developed.

Western spruce budworm has defoliated from 2 to 4 million acres annually in the Northern Region for the past two decades, and this pattern will probably persist. As the Region places more emphasis on establishing and managing seed production areas and seed orchards for tree regeneration purposes, insects and diseases that affect cones and seeds will become more of a problem. Historically, Douglas-fir tussock moth outbreaks occurred at about 10-year intervals and can be expected again in the mid-1980's. Introduced parasites, other natural enemies, and weather appear to be controlling the larch casebearer, which is expected to have a reduced impact in coming years. Short-lived outbreaks of other forest insects, such as pine butterfly, forest tent caterpillar, sawflies, and various loopers, can be expected occasionally.

Dwarf mistletoes, widespread in stands of Douglas-fir, western larch, and lodgepole pine trees, reduce growth Region-wide by about 93 million cubic feet a year on National Forest lands alone. Damage is most severe in unmanaged old growth stands and in young stands that were established under an infected forest overstory. Silvicultural treatments can reduce losses but because of the large acreages requiring treatment, substantial losses are still expected for a few decades. Root pathogens also are widespread in the Region. Recent surveys have shown substantial acreages with large, expanding centers of trees killed by root diseases. About 38,000 acres on the Idaho Panhandle National Forests and 20,000 acres on the Lolo National Forest have large root disease centers. Many stands also contain extensive single-tree and small-group killing by root diseases and bark beetles. Douglas-fir and grand fir trees are most susceptible, although all conifers are affected to some degree by one or more root pathogens. The problem can persist from one rotation to the next. White pine blister rust causes extensive losses in many northern Idaho and western Montana western white pine stands. Stem decays cause substantial defects in old-growth stands, but losses are expected to decline as stands are brought under management and rotation lengths are shortened. Stem cankers, native rusts, and foliage diseases are locally damaging, especially in young stands. The major nursery disease at present is grey mold on conifers. Damage is especially serious on western larch raised in greenhouses.

LANDS

In the Northern Region, the lands function is divided into five parts: land adjustments; rights-of-way; land uses; land status; and land and resource management planning. Land adjustments are acquisitions or exchanges of land to facilitate management of National Forest resources. The rights-of-way program deals with acquiring and maintaining access to National Forest land. By contrast, requests for access across National Forest land (for example, energy or utility rights-of-way) are dealt with in the land uses program. The land status program keeps up-to-date records of National Forest land holdings. Land and resource management planning includes planning at the Forest and Regional levels. Technical and financial assistance is also given to State Foresters to support State forest planning and prime forest lands identification. Specific concerns in land adjustments and land uses are discussed further.

Land Adjustments. Areas in Idaho, Montana, North Dakota, and South Dakota, where large private corporation lands are intermingled in a checkerboard pattern with National Forest System lands, are of particular relevance to the Region's land adjustments program. Intermingled, non-Federal landowners generally want to consolidate their ownerships. In the past, this has also been a Forest Service objective regarding National Forest System lands. Such consolidations would be through land exchanges.

During the past 20 years, several proposals throughout the Region to consolidate large blocks of intermingled corporate "checkerboard" ownership and National Forest System lands have generated strong public

debate. Public concern emphasized social and economic impacts on their historical uses of the public lands which would have been exchanged to private ownership. Local governments also were concerned with large adjustment proposals when they would adversely affect county revenues resulting from changes in the National Forest land base.

Land Uses. The location and management of corridors for oil and gas pipelines, major electrical transmission facilities, and the interstate highway and railroad systems that pass through National Forest System lands are included in the land uses program (figures IV-1, -2, and -3). Two corridor studies now underway are the cooperative FS/BLM western states study and the joint FS/State of Montana/BLM study. Because corridors relate to energy, they are also addressed in the minerals and energy resources program element.

The Northern Region currently is spanned by 230-kilovolt and lower voltage electrical transmission systems running generally east and west. Some systems tie into the western Montana section of the Bonneville Power Administration grid. To meet projected growth, larger electrical transmission systems are being considered.

A 1976 study by the Bonneville Power Administration and the Forest Service indicated that at least seven major east-west energy corridors will be needed by 2020 if the annual electrical usage growth rate continues to be 4.9 percent. About 10 transmission line projects that affect National Forest lands are in the planning or construction phases. A 500 kV double circuit electrical transmission line from Colstrip, Montana, to Spokane, Washington, is now in the planning phase. Additional electrical interties extending into the Dakotas are also under consideration. As systems expand, north-south interties will be required to maintain reliability.

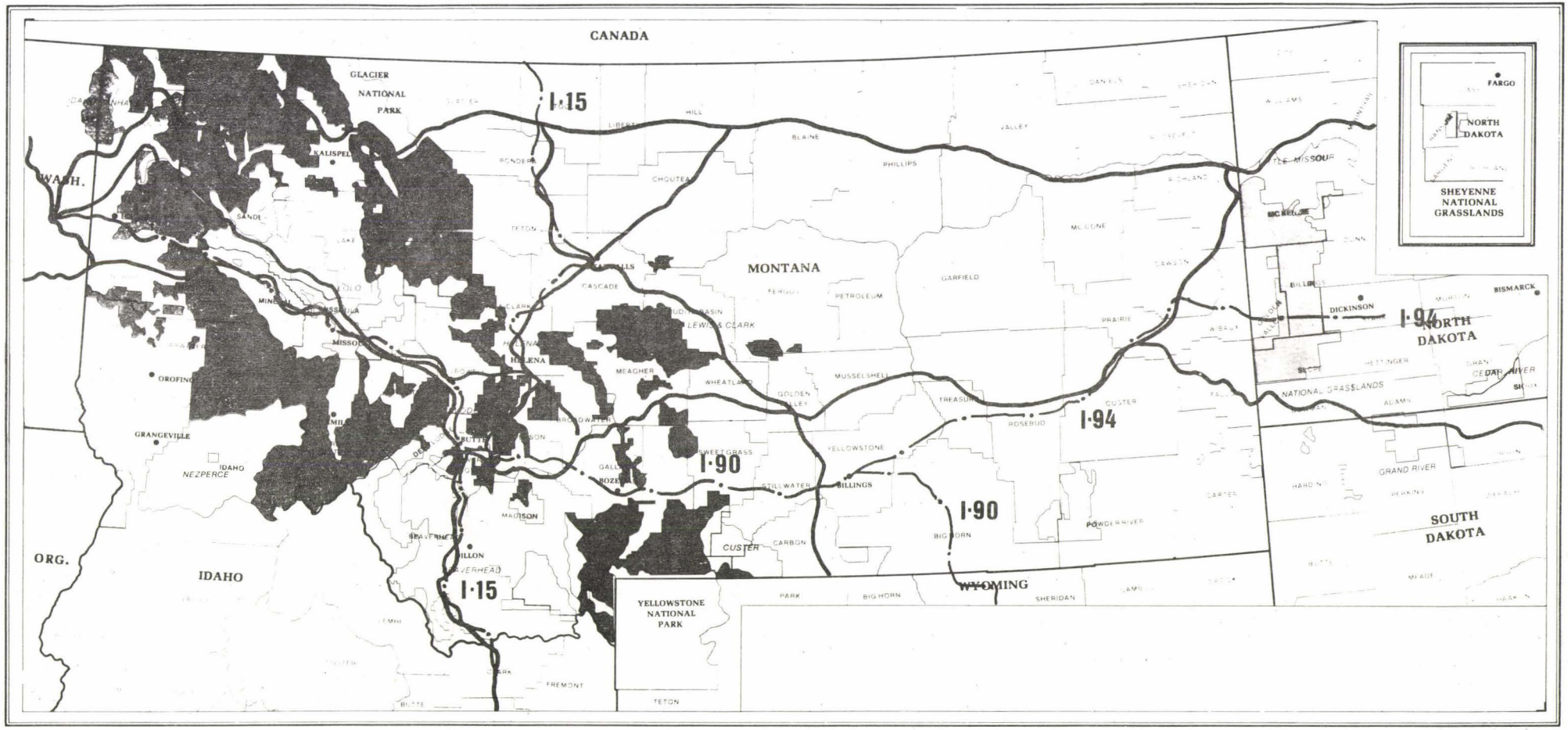
In the western Montana analysis area, only one additional hydroelectrical generating site (Kootenai Falls) is currently under consideration on National Forest land. Two proposed thermal plants (Colstrip 3 and 4) are near National Forest land in the central and eastern Montana analysis area. Energy generation sites may increase if development of thermal energy plants fueled by biomass becomes feasible. Sites that use coal will increase, and a few new hydroplants will probably be proposed.

At present, one significant oil pipeline extends from Spokane to Billings. The Northern Tier Oil Pipeline proposal may result in one 40- to 42-inch line spanning the Region. Additional developments of oil and gas fields and discoveries in the Overthrust Belt may require additional major pipelines in central and eastern Montana and North Dakota analysis areas. Coal slurry pipelines also are a possibility.

Northern Region

Interstate Highway and Railroad System

Figure IV-1



NORTHERN REGION ... National Forests & National Grasslands

LEGEND

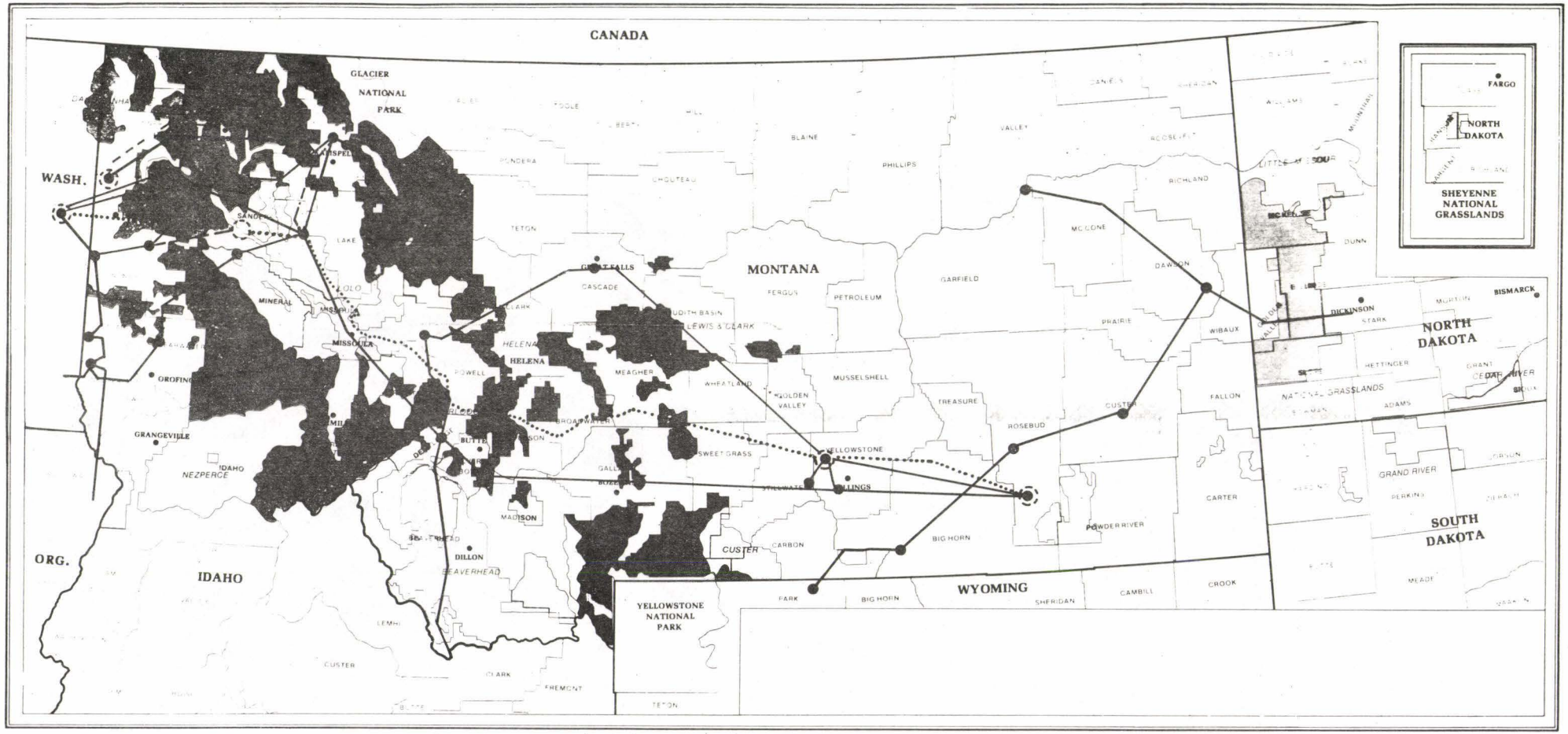
—·— Interstate Highway

——— Primary Railroad

Northern Region

Major Electrical Transmission

Figure IV-2



NORTHERN REGION ... National Forests & National Grasslands

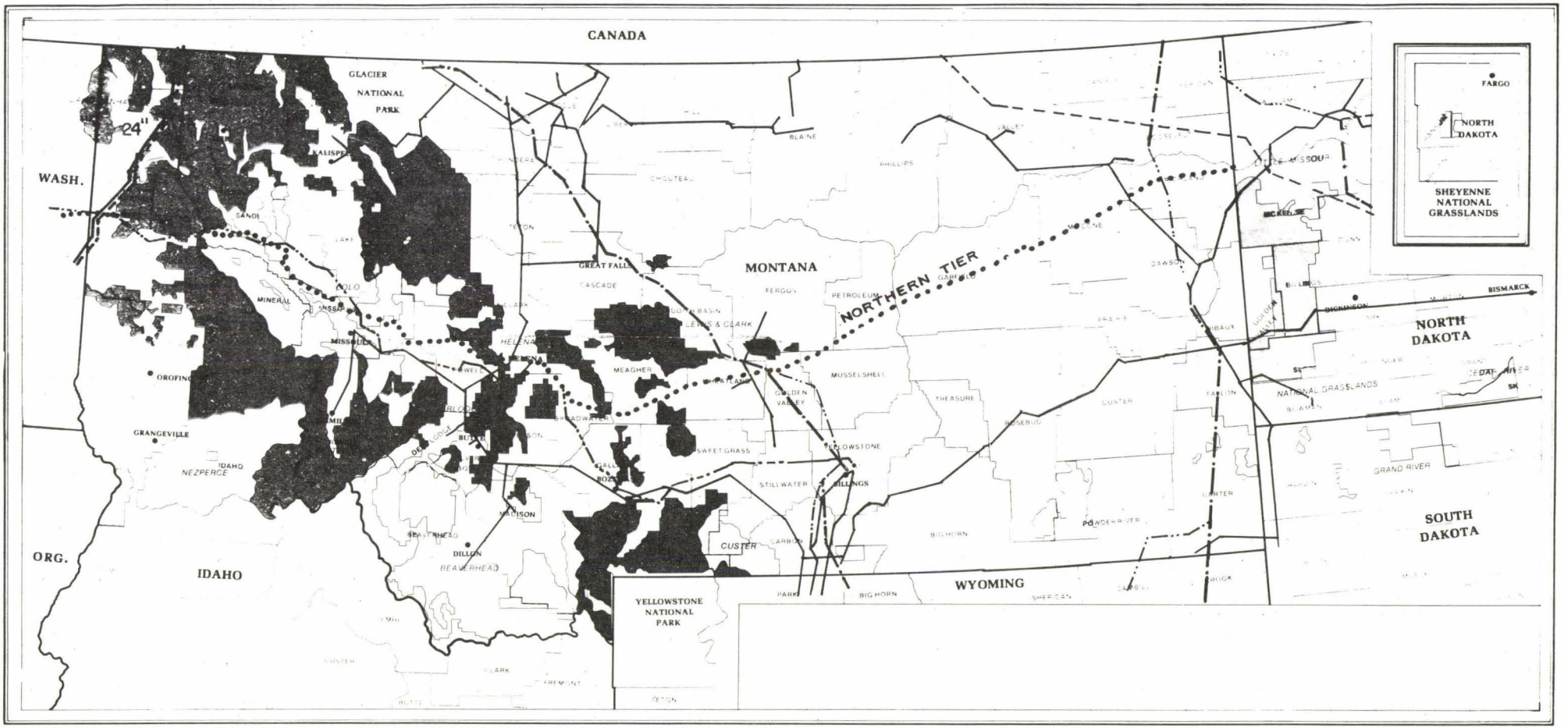
LEGEND

- ●——● Solid lines and dots are existing facilities- 1-1-79 230kv or above
- ◌ Tentative Stations
- ····· Committed 500 kv
- ----- Committed 230kv
- -·-·- Tentative 230 kv

Northern Region

Oil and Gas Pipelines

Figure IV-3



NORTHERN REGION ... National Forests & National Grasslands

LEGEND

Crude Oil
- —·— Major 12" dia.
- —··— Minor 8"- 10" dia.

Natural Gas
- 24" dia. & larger
- —— 22" dia. & smaller

- --- proposed pipeline under construction
- ····· Northern Tier Proposed Route
- —·—·— Major Petroleum Products 10"

SOILS

The soils support program assists in protecting and maintaining soil productivity on the Region's forest and range lands. The main emphasis has been on providing information for use by land managers and in Forest and Regional planning through research, surveys, and mapping.

Currently, a soil management subsection map for northern Idaho, central and western Montana (USDA-Forest Service, 1980d) provides managers with information they can use to determine soil capability, natural hazards, and limitations and sensitivity to use. In addition, each Forest is completing land type mapping that will provide information useful in planning and administering land management activities. Guidelines have also been developed for project use (FSM 2551.5) to help avoid or reduce soil compaction.

FACILITIES

The major categories of facilities are (1) administrative buildings and structures and (2) the transportation system, primarily roads and trails.

The 1,900 Forest Service administrative buildings and structures (such as fire lookouts, dwellings, offices, warehouses, and barns) have an estimated replacement value of $110 million. The average annual maintenance costs are $1,600,000.

About 6,000 miles of trails are maintained annually at a cost of about $1 million. Most trails are used primarily for recreation.

In 1979 the Northern Region road system totaled 29,591 miles of arterial, collector, and local roads. Road maintenance costs about $7 million annually. Most construction of collector and local roads is for timber harvest and other resource management purposes. About 1,700 miles of roads are constructed and 700 miles are reconstructed each year as a result of timber sale contracts. These are financed by purchaser credits against timber sale stumpage values. Another 20 to 100 miles a year are financed by appropriated funds. In 1979, purchaser credits financed a $32 million capital investment in road construction and reconstruction. Appropriated Forest Road and Trail expenditures were approximately $14 million for about 156 miles of construction and 98 miles reconstructed. Costs have been increasing rapidly, primarily due to (1) inflation, (2) more difficult terrain and remote locations, and (3) higher standards necessary to protect the environment.

INTERDISCIPLINARY TEAM COMPOSITION

Participant	Job Title	Education or Degree	Applicable work Experience (Years)
Core Team			
Over the past 2 years, the following people have participated on the Regional Planning Core Team. The core team members are responsible for day-to-day production of the Regional Plan. Team members worked with all issue and management concern work groups as well as with the alternatives, environmental effects, and process and advisory teams in developing the elements of the Plan.			
Bonnie Berry	Public Involvement Specialist	B.A.	7
Darrel L. Kenops	Land Management Planner	B.S.	17
Kerry McMenus	Social Scientist	B.A.	3
William Magnuson	Forester-State and Private Forestry	B.S.	27
Kent Nelson	Resource Planner	B.S.	14
Linda J. Peterson	Social Scientist	M.A.	1
Glenn A. Roloff	Resource Planner	B.S.	20
Terry Solberg	Supervisory Forester	B.S.	16
Victor Standa	Forester-Land Management	B.S.	19
Norm Yogerst	Soil Scientist	M.S.	16
Support Personnel			
Administrative Services	Duplicating Center		
Administrative Services	Word Processing Center		
Planning, Programing, and Budgeting	Support Staff		
Joann Bradley	Secretary to Core Team		
Vern Fleisher	Interdisciplinary Planner		
Susan Super	Writer-Editor		
Deanna M. Williams	Cartographic Technician/ Illustrator		

Participant	Job Title	Education or Degree	Applicable work Experience (Years)
Process and Management Advisory Team			
Over the past 2 years, the following people have participated on the Regional Planning Process and Management Advisory Team. The process and management advisory team is responsible for providing guidance and support for the overall project.			
Keith Evans	Assistant Station Director for Research Planning and Applications	Ph.D.	17
William R. Franks	Land Management Planner	B.S.	20
Darrel L. Kenops	Land Management Planner	B.S.	17
Ralph Klawitter	Assistant Station Director for Research Programs in Montana and N. Idaho	Ph.D.	30
Floyd W. Pond	Group Leader, Planning, Programing, & Budgeting	Ph.D.	27
James E. Reid	Director, Planning, Programing, & Budgeting	M.S.	17
Jerry Sesco	Assistant Station Director for Research Planning and Applications	Ph.D.	17
David C. Terry	Group Leader, Programing Group	B.S.	30
John B. White	Group Leader, Land Management Planning	B.S.	22

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The published material above can be obtained either from public libraries in the Region, or by writing directly to the publisher. The addresses of the Research Stations whose reports have been cited in this document are:

Intermountain Forest and Range Experiment Station (INT)
507 - 25th Street
Ogden, UT 84401

Pacific Northwest Forest and Range Experiment Station (PNW)
809 NE 6th Avenue
Portland, OR 97232

Pacific Southwest Forest and Range Experiment Station (PSW)
1960 Addison Street
P.O. Box 245
Berkeley, CA 94701

Rocky Mountain Forest and Range Experiment Station (RM)
240 W. Prospect Street
Fort Collins, CO 80526

Forest Service Manuals (FSM) and Forest Service Handbooks (FSH) are on file in Washington, D.C., at the Office of the Chief of the Forest Service, at the Northern Region Office and at the headquarters of the National Forests. The address of the Regional Office, and the cities in which the National Forest headquarters are located, are listed below:

Forest Service Northern Region
Federal Building
P.O. Box 7669
Missoula, MT 59807

Beaverhead National Forest
Dillon, MT

Bitterroot National Forest
Hamilton, MT

Clearwater National Forest
Orofino, ID

Custer National Forest
Billings, MT

Deerlodge National Forest
Butte, MT

Flathead National Forest
Kalispell, MT

Gallatin National Forest
Bozeman, MT

Helena National Forest
Helena, MT

Idaho Panhandle National Forests
Coeur d'Alene, ID

Kootenai National Forest
Libby, MT

Lewis and Clark National Forest
Great Falls, MT

Lolo National Forest
Missoula, MT

Nezperce National Forest
Grangeville, ID

Forest Service Manuals and Handbooks are also on file at local Ranger District offices.

GLOSSARY

ACRE EQUIVALENTS	A term used to describe the area influenced by particular wildlife habitat improvements. Conversion factors, keyed to the home ranges of different target species, have been developed for each type of improvement to convert acres to acre equivalents. Forest Service Manuals list these conversion factors.
ADMINISTRATION-ENDORSED AREAS	Areas recommended by the President to the Congress for classification or designation as National Wilderness, Wild and Scenic River, or National Recreation Area.
ADMINISTRATIVELY DESIGNATED AREAS	Areas which merit special attention and management, such as scenic or geological areas, and which are designated by the Secretary of Agriculture, the Chief of the Forest Service, or the Regional Forester under Title 36, Code of Federal Regulations.
ALLOCATED FUNDS	Funds appropriated by Congress to other Federal Agencies. Funds are transferred from these agencies to the Forest Service for work to be done for them (Soil Conservation Service, Agricultural Stabilization and Conservation Service, Farmers Home Administration, Department of Labor). Examples of these types of funds are: river basin studies, watershed planning, rural community fire protection, resource conservation and development, Young Adult Conservation Corps, and Job Corps.
ANIMAL UNIT MONTH (AUM)	The amount of feed or forage required by one mature (1,000 lb.) cow or equivalent for 1 month.
APPROPRIATED FUNDS	Funds appropriated by Congress directly to the Forest Service through the Interior and Related Agency Bill.
ARTERIAL ROAD	Provides service to large land areas and usually connects with public highways or other roads to form an integrated network of primary travel routes.
BEST MANAGEMENT PRACTICES	Standard practices or procedures or a combination of procedures that are determined after problem assessment, examination of alternative procedures, and public participation to be the most effective, practical means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.
BIOLOGICAL GROWTH-POTENTIAL	The average net growth attainable in a fully stocked natural area of forest land.

BOG MEADOW	Wet meadow with sphagnum peat accumulation and associated plants.
CAPABILITY	The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease.
COLLECTOR ROAD	Serves smaller land areas than an arterial road, and is usually connected to an arterial or public highway. Collects traffic from local roads and/or terminal facilities.
CONDITION CLASS	A classification for recreation facilities denoting level of maintenance, need for replacement or elimination, etc. There are eight condition classes into which recreation facilities are classified. These are described in Forest Service Handbook 2309.11.
COMMERCIAL FOREST LAND (CFL)	Forest land which is producing or capable of producing crops of industrial wood and has not been reserved or deferred. This includes areas suitable for management to grow crops of industrial wood generally of a site quality capable of producing in excess of 20 cubic feet per acre of annual growth. This includes both accessible and inaccessible areas. Permanently inoperable or nonstockable areas are excluded because they are not suitable for silvicultural management. Conversely, nonstocked areas which are stockable and otherwise meet this definition are included.
CONGRESSIONALLY CLASSIFIED AND DESIGNATED AREAS	Areas which require congressional enactment for their establishment, such as National Wildernesses, National Wild and Scenic Rivers, National Recreation Areas.
CONSUMPTIVE USE	Uses of a resource that reduce the supply. For example, some consumptive uses of water are: irrigation, domestic, and industrial use.
CORRIDOR	A linear strip of land which has ecological, technical, economic, social, or similar advantages over other areas for the present or future location of transportation or utility.
D.B.H.	Diameter at breast height (d.b.h.).

DESTINATION TRAVEL	Travel to a specific area, such as a campground, which can be used as a base for a variety of recreation activities.
DEVELOPED RECREATION	Occurs on sites developed or managed to concentrate use and/or to facilitate a particular kind of activity. Developed recreation takes place at campgrounds, picnic grounds, swimming beaches, boat launching sites, ski resorts, and other sites modified to protect natural resources and for safety and convenience of recreationists. People who use developed sites often leave the site and engage in dispersed recreation.
D.I.B.	Diameter inside the bark (d.i.b.).
DISPERSED RECREATION	Occurs outside of sites developed or managed to concentrate recreation use. As used here, it will not include recreation use of designated wildernesses. Dispersed recreation takes place in both roaded and unroaded areas. Typical activities are driving for pleasure, motorcycling, hiking, hunting, fishing, snowmobiling, cross-country skiing, berrypicking, and many others.
ENDANGERED SPECIES	Plant or animal species identified by the Secretary of Interior as endangered in accordance with the 1973 Endangered Species Act.
ENVIRONMENTAL ANALYSIS	An analysis of alternative actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions.
ENVIRONMENTAL ASSESSEMENT	The concise document required by the regulations for implementing the procedural requirements of NEPA (40 CFR 1508.9).
FORAGE	All browse and nonwoody plants that are available to livestock or game animals and are used for grazing or harvested for feeding.
GOAL	A concise statement of the state or condition that a land and resource management plan is designed to achieve. A goal is usually not quantifiable and may not have a specific date for completion.
GOODS AND SERVICES	The various outputs produced by forest and range land renewable resources. The tangible and intangible values of the outputs are expressed in market and nonmarket terms.

HABITAT TYPE	An aggregation of all land areas potentially capable of producing similar plant communities at climax.
IN SITU GASIFICATION	On site conversion and removal of the valuable components of a coal deposit without physical extraction of the rock (e.g., removal of coal energy through a gasification process).
INTEGRATED PEST MANAGEMENT	A process in which all aspects of a pest-host system are studied and weighed to provide information for decisionmaking. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system. It encompasses the integration and use of biological and economically feasible and efficient pest management strategies that include an array of biological, chemical, cultural, and genetic management practices.
KUCHLER VEGETATION TYPES	Potential natural vegetation of the coterminous United States, classified by Kuchler.
LOCAL ROAD	Connects terminal facilities with collector or arterial roads, or public highways.
LONG-TERM SUSTAINED YIELD CAPACITY	The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified intensity of management consistent with multiple use objectives.
LOW, AVERAGE, AND HIGH PRODUCTION POTENTIAL LAKES	High lakes for which potential for the production of plant and animal life is low, average, or high as defined by the following parameters (table G-1).

TABLE G-1

Environmental parameters	Production potential		
	Low	Average	High
Exposure direction	N	N-NW, NE-E	SW-S-SE
Elevation (ft)	6,000	4,000-6,000	4,000
Water level fluctuation (ft)	10	8-10	0-2
Alkalinity (mg/1)	14	15-29	30+
Hardness (mg/1)	4	5-17	18+
Gammarus abundance	None	Incidental	Abundant
Daphnia or large calanoid copepods	None	Incidental	Abundant
Aquatic macrophytes	None	Scattered	Large beds
Percent acreage less than 10' deep	15	15-35	35
Littoral zone bottom composition (water depth less than 10' deep)	Bedrock or boulders	Other compositions	Rubble and/-or gravel
Rock types	Granite, quartzite	Metamorphic rocks	Limestone

M	Thousand
MM	Million
NATURAL CATASTROPHIC CONDITION	A significant change in forest conditions that affect Forest Plan resource management objectives and their projected and scheduled outputs, uses, costs, and impacts on local communities and environmental quality.
NONCONSUMPTIVE USE	Uses of resources that do not reduce the supply. For example: Nonconsumptive uses of water include hydroelectric power generation, boating, swimming.
NONGAME	Species of animals which are not managed as a sport hunting resource.
NONPOINT SOURCE POLLUTION	Sources of pollution that are diffuse in origin and depend heavily on weather conditions such as rainstorms or snowmelt. Their transportation into receiving water is not well defined or constant, and their discharge occurs at many diffuse locations. Pollution from forest management is of this type.
OBJECTIVE	A specified statement of measurable results to be achieved within a stated time period. Objectives reflect alternative mixes of all outputs or achievements which can be attained at a given budget level. Objectives may be expressed as a range of outputs.
PLANNING AREA	The area covered by a Regional or Forest Plan.
POLICY	A guiding principle upon which is based a specific decision or set of decisions.
PRODUCTION POTENTIAL	The capability of the land or water to produce life-sustaining features (forage, timber, wildlife habitat, and aquatics).
PROGRAM	The Renewable Resource Program required by the RPA.
PURCHASER CREDIT	The dollar amount allowed in a timber sale contract for construction or reconstruction of specified roads.
RECREATION CAPACITY	The number of people who can take advantage of recreation opportunities at any one time without substantially diminishing the quality of the recreation experience.
RECREATION COMPOSITE	An area of land that contains special or significant recreation resources, features, or opportunities which make of value primarily for outdoor recreation.

RECREATION SUPPORT FACILITIES	Nearly all types of forest recreation--developed, dispersed, and wilderness--are dependent to some extent on support facilities, such as trails, loading ramps, campgrounds, boat-launching sites, and parking areas, for access to public lands and waters.
RECREATION VISITOR DAY (RVD)	One visitor day equals 12 hours (one person for 12 hours, or 12 people for 1 hour, or any combination thereof).
REGIONAL ANALYSIS AREAS	Geographic areas within the Region that encompass several Forests or Grasslands and are consistent with State planning regions. Northern Region analysis areas are: Northern Idaho, North Dakota, central and eastern Montana, and western Montana.
REGULATIONS	36 CFR refers to the Code of Federal Regulations for implementing the National Forest Management Act (36 CFR 219).
RIPARIAN	Land areas directly influenced by water. Usually, visible vegetative or physical characteristics show this water influence. Streamsides, lake borders, and marshes are typical riparian areas.
RPA	The Forest and Rangeland Renewable Resources Planning Act of 1974. Also refers to the national assessment and recommended program developed to fulfill the requirements of the act. The most recent recommended program was done in 1980.
SENSITIVE SPECIES	Species which (1) have appeared in the Federal Register as proposals for classification and are under consideration for official listing as endangered or threatened species, (2) are on an official State list, or (3) are recognized by the Regional Forester as needing special management in order to prevent their placement on Federal or State lists.
SILVICULTURAL SYSTEM	A combination of interrelated actions whereby forests are tended, harvested, and replaced. The combination of management practices used to manipulate the vegetation results in forests of distinctive form and character, and this determines what multiple resource benefits can be obtained. Systems are classified as even-aged and uneven-aged.
SITE PREPARATION	A general term for removing unwanted vegetation, slash, and even roots and stones from a site before reforestation.
SMALL GAME	Birds and small mammals normally hunted or trapped.

SOCIETY OF AMERICAN FORESTERS (SAF) FOREST AND COVER TYPES	A forest type is a descriptive term used to group stands of similar composition and development due to given ecological factors; thus they may be differentiated from other groups of stands. The term suggests repetition of the same character under similar conditions. A cover type is a forest type now occupying the ground, and it does not imply whether the type is temporary or permanent.
SUITABILITY	The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.
THREATENED SPECIES	Plant or animal species identified by the Secretary of Interior as threatened in accordance with the 1973 Endangered Species Act.
TIMBER PRODUCTION	The growing, tending, harvesting, and regeneration of regulated crops of industrial wood. Industrial wood includes logs, bolts, or other round sections cut from trees for industrial or consumer use, except fuelwood.
UTILIZATION STANDARDS	Standards guiding the use and removal of timber. They are measured in terms of diameter at breast height (d.b.h.) and type of the tree inside the bark (top d.i.b.), and percent "soundness" of the wood.
VIABLE POPULATIONS	A wildlife or fish population of sufficient size to maintain its existence over time in spite of normal fluctuations in population levels.
VISUAL QUALITY OBJECTIVE	A desired level of excellence based on physical and sociological characteristics of an area. Refers to the degree of acceptable alteration of the characteristic landscape. Retention (R). In general, human activities are not evident to the casual forest visitor. Partial Retention (PR). In general, human activities may be evident but must remain subordinate to the characteristic landscape.

Modification (M). Human activity may dominate the characteristic landscape but must, at the same time, utilize naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in middle ground or background.

Maximum Modification (MM). Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

Enhancement. A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists.

WATER USES (Present and Anticipated Future Use)

Domestic (Household) - This includes household water, watering of lawns, gardens, etc., for Forest Service administrative sites. For private residences, includes watering of lawns and gardens up to one-half acre.

Domestic (Recreational) - This includes camp and picnic grounds, special-use concessionaires, individual or small groups (10 units or less) of recreational residences, lodges, restaurants, etc.

Recreation - This includes any use other than above including impoundment or instream flow specifically intended for recreational use. This also includes water required for Wild and Scenic Rivers.

Stock Water - This includes use for domestic livestock grazing on National Forest, other public, or private lands.

Irrigation - This includes application of water for the production of timber, crops, or the maintenance at large (more than one-half acre) areas of lawns, gardens, etc. This includes Forest Service pastures.

Fish and Wildlife - This includes, but is not limited to, storage of water that is either retained in the reservoir or released downstream to support these purposes. Also includes instream reservation of natural flow for these purposes.

Power - This includes water used for hydroelectric and hydromechanical power generation.

Instream - This includes inchannel flow for purposes other than those under Recreation, Fish and Wildlife, and Navigation, such as watershed protection, maintenance of aquatic ecosystems, and visual quality.

Flood Control - This includes water (stored, directed or rerouted) for the sole purpose of flood control or abatement.

Forest Improvement or Protection - This includes fire protection, water use for road construction and maintenance, and Forest Service field camps.

WET MEADOW — Not truly aquatic; hydric soils.

WILDERNESS — Under the 1964 Wilderness Act, wilderness is undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation. It is protected and managed so as to preserve its natural condition which (1) generally appears to have been affected primarily by the forces of nature with the imprint of man's activity substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres or is of sufficient size to make practical its preservation, enjoyment, and use in an unimpaired condition; and (4) may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest.

WILDLAND — (1) Uncultivated land other than fallow. It may be neglected altogether or maintained for such purposes as wood or forage production, wildlife, recreation, or protective plant cover.

(2) Land virtually uninfluenced by human activity.

WINDOW — A short corridor that makes available critical routes through which facilities requiring rights-of-way must pass.

APPENDIX A: ABBREVIATION KEY FOR HABITAT TYPES AND NAMES OF ESTABLISHED AND PROPOSED RESEARCH NATURAL AREAS IN THE NORTHERN REGION

1. Forest Habitat Types

Code	Abbreviation	Scientific Name Common Name
010	SCREE	Forested Scree Forested Scree
040	PIFL/AGSP	Pinus flexilis/Agropyron spicatum Limber pine/Bluebunch wheatgrass
050	PIFL/FEID	Pinus flexilis/Festuca idahoensis Limber pine/Idaho fescue
070	PIFL/JUCO	Pinus flexilis/Juniperus Communis Limber pine/Common Juniper
130	PIPO/AGSP	Pinus ponderosa/Agropyron spicatum Ponderosa pine/Bluebunch wheatgrass
140	PIPO/FEID	Pinus ponderosa/Festuca idahoensis Ponderosa pine/Idaho fescue
160	PIPO/PUTR	Pinus ponderosa/Purshia tridentata Ponderosa pine/Bitterbrush
170	PIPO/SYAL	Pinus ponderosa/Symphoricarpos albus Ponderosa pine/Snowberry
180	PIPO/PRVI	Pinus ponderosa/Prunus virginiana Ponderosa pine/Chokecherry
210	PSME/AGSP	Pseudotsuga menziesii/Agropyron spicatum Douglas-fir/Bluebunch wheatgrass
220	PSME/FEID	Pseudotsuga menziesii/Festuca indahoensis Douglas-fir/Idaho fescue
230	PSME/FESC	Pseudotsuga menziesii/Festuca scabrella Douglas-fir/Rough fescue
250	PSME/VACA	Pseudotsuga menziesii/Vaccinium caespitosum Douglas-fir/Dwarf huckleberry

Code	Abbreviation	Scientific Name Common Name
260	PSME/PHMA	Pseudotsuga menziesii/Physocarpus malvaceus Douglas-fir/Ninebark
280	PSME/VAGL	Pseudotsuga menziesii/Vaccinium globulare Douglas-fir/Blue huckleberry
290	PSME/LIBO	Pseudotsuga menziesii/Linnaea borealis Douglas-fir/Twinflower
310	PSME/SYAL	Pseudotsuga menziesii/Symphoricarpos albus Douglas-fir/Snowberry
320	PSME/CARU	Pseudotsuga menziesii/Calamagrostis rubescens Douglas-fir/Pinegrass
330	PSME/CAGE	Pseudotsuga menziesii/Carex geyeri Douglas-fir/Elk sedge
340	PSME/SPBE	Pseudotsuga menziesii/Spirea betulifolia Douglas-fir/White spirea
350	PSME/ARUV	Pseudotsuga menziesii/Arctostaphylos uva-ursi Douglas-fir/Kinnikinnick
360	PSME/JUCO	Pseudotsuga menziesii/Juniperus communis Douglas-fir/Common juniper
370	PSME/ARCO	Pseudotsuga menziesii/Arnica cordifolia Douglas-fir/Heartleaf arnica
410	PICEA/EQAR	Picea/Equisetum arvense Spruce/Field horsetail
420	PICEA/CLUN	Picea/Clintonia uniflora Spruce/Queencup beadlily
430	PICEA/PHMA	Picea/Physocarpus malvaceus Spruce/Ninebark
440	PICEA/GATR	Picea/Gallium triflorum Spruce/Sweetscented bedstraw
450	PICEA/VACA	Picea/Vaccinium caespitosum Spruce/Dwarf huckleberry
460	PICEA/SEST	Picea/Senecio streptanthifolius Spruce/Cleft-leaf groundsel

Code	Abbreviation	Scientific Name Common Name
470	PICEA/LIBO	Picea/Linnaea borealis Spruce/Twinflower
480	PICEA/SMST	Picea/Smilacina stellata Spruce/Starry Solomon's seal
510	ABGR/XETE	Abies grandis/Xerophyllum tenax Grand fir/Beargrass
511	ABGR/COOC	Abies grandis/Coptis occidentalis Grand fir/Western gold thread
516	ABGR/ASCA	Abies grandis/Asarum caudatum Grand fir/British Columbia wild ginger
520	ABGR/CLUN	Abies grandis/Clintonia uniflora Grand fir/Queencup beadlily
590	ABGR/LIBO	Abies grandis/Linnaea borealis Grand fir/Twinflower
530	THPL/CLUN	Thuja plicata/Clintonia uniflora Western redcedar/Queencup beadlily
540	THPL/ATFI	Thuja plicata/Athyrium filix-femina Wester redcedar/Lady fern
545	THPL/ASCA	Thuja plicata/Asarum caudatum Western redcedar/British Columbia wild ginger
550	THPL/OPHO	Thuja plicata/Oplopanax horridum Western redcedar/Devil's club
560	THPL/ADPE	Thuja plicata/Adiantum pedatum Western redcedar/Maidenhair fern
570	TSHE/CLUN	Tsuga heterophylla/Clintonia uniflora Western hemlock/Queencup beadlily
605	ABLA/CABI	Abies lasiocarpa/Caltha biflora Subalpine fir/Marsh marigold
610	ABLA/OPHO	Abies lasiocarpa/Oplopanax horridum Subalpine fir/Devil's club
620	ABLA/CLUN	Abies lasiocarpa/Clintonia uniflora Subalpine fir/Queencup beadlily

Code	Abbreviation	Scientific Name Common Name
630	ABLA/GATR	Abies lasiocarpa/Galium triflorum Subalpine fir/Sweetscented bedstraw
635	ABLA/STAM	Abies lasiocarpa/Streptopus amplexifolius Subalpine fir/Twisted stalk
638	ABLA/COOC	Abies lasiocarpa/Coptis occidentalis Subalpine fir/Western gold thread
640	ABLA/VACA	Abies lasiocarpa/Vaccinium caespitosum Subalpine fir/Dwarf huckleberry
650	ABLA/CACA	Abies lasiocarpa/Calamagrostis canadensis Subalpine fir/Bluejoint
660	ABLA/LIBO	Abies lasiocarpa/Linnaea borealis Subalpine fir/Twinflower
670	ABLA/MEFE	Abies lasiocarpa/Menziesia ferruginea Subalpine fir/Menziesia
680	TSME/MEFE	Tsuga mertensiana/Menziesia ferruginea Mountain hemlock/Menziesia
690	ABLA/XETE	Abies lasiocarpa/Xerophyllum tenax Subalpine fir/Beargrass
710	TSME/XETE	Tsuga mertensiana/Xerophyllum tenax Mountain hemlock/Beargrass
720	ABLA/VAGL	Abies lasiocarpa/Vaccinium globulare Subalpine fir/Blue huckleberry
730	ABLA/VASC	Abies lasiocarpa/Vaccinium scoparium Subalpine fir/Grouse whortleberry
740	ABLA/ALSI	Abies lasiocarpa/Alnus sinuata Subalpine fir/Mountain (Sitka) alder
750	ABLA/CARU	Abies lasiocarpa/Calamagrostis rubescens Subalpine fir/Pinegrass
770	ABLA/CLPS	Abies lasiocarpa/Clamatis pseudoalpina Subalpine fir/Virgin's bower
780	ABLA/ARCO	Abies lasiocarpa/Arnica cordifolia Subalpine fir/Heartleaf arnica

Code	Abbreviation	Scientific Name Common Name
790	ABLA/CAGE	Abies lasiocarpa/Carex geyeri Subalpine fir/Elk sedge
810	ABLA/RIMO	Abies lasiocarpa/Ribes montigenum Subalpine fir/Alpine prickly currant
820	ABLA-PIAL/VASC	Abies lasiocarpa-Pinus albicaulis/ Vaccinium scoparium Subalpine fir-Whitebark pine/ Grouse whortleberry
830	ABLA/LUHI	Abies lasiocarpa/Luzula hitchcockii Subalpine fir/Wood-rush
840	TSME/LUHI	Tsuga mertensiana/Luzula hitchcockii Mountain hemlock/Wood-rush
850	PIAL/ABLA	Pinus albicaulis/Abies lasiocarpa Whitebark pine/Subalpine fir
860	LALY/ABLA	Larix lyallii/Abies lasiocarpa Subalpine larch/Subalpine fir
870	PIAL	Pinus albicaulis Whitebark pine
920	PICO/VACA	Pinus contorta/Vaccinium caespitosum Lodepole pine/Dwarf huckleberry
910	PICO/PUTR	Pinus contorta/Purshia tridentata Lodgepole pine/Bitterbrush
N/A	PIFL	Pinus flexilis Limber pine

2. Nonforest Habitat Types

Abbreviation	Scientific Name Common Name
STCO/BOGR	Stipa comata/Bouteloua gracilis Needle-and-thread/Blue grama
AGSP/BOGR	Agropyron spicatum/Boutelona gracilis Bluebunch wheatgrass/Blue grama
AGSP/AGSM	Agropyron spicatum/Agropyron smithii Bluebunch wheatgrass/Western wheatgrass
AGSP/OPPO	Agropyron spicatum/Opuntia polyacantha Bluebunch wheatgrass/Plains prickly pear
FESC/AGSP	Festuca scabrella/Agropyron spicatum Rough fescue/Bluebunch wheatgrass
FESC/FEID	Festuca scabrella/Festuca idahoensis Rough fescue/Idaho fescue
FEID/AGSM	Festuca idahoensis/Agropyron smithii Idaho fescue/Western wheatgrass
FEID/CAHO	Festuca idahoensis/Calamagrostis howellii Idaho fescue/Howell's reedgrass
FEID/AGSP	Festuca idahoensis/Agropyron spicatum Idaho fescue/Bluebunch wheatgrass
FEID/AGCA	Festuca idahoensis/Agropyron caninum Idaho fescue/Cutting wheatgrass
FEID/CAFI	Festuca idahoensis/Carex filifolia Idaho fescue/Threadleaf sedge
FEID/STRI	Festuca idahoensis/Stipa richardsonii Idaho fescue/Richardson needlegrass
FEID/DECA	Festuca idahoensis/Deschampsia caespitosa Idaho fescue/Tufted hairgrass
DECA/CAREX	Deschampsia caespitosa/Carex Tufted hairgrass/Sedge
FEVI	Festuca viridula Green fescue

Abbreviation	Scientific Name Common Name
FEID/SYAL	Festuca idahoensis/Symphoricarpos albus Idaho fescue/Snowberry
FESC/SYAL	Festuca scabrella/Symphoricarpos albus Rough fescue/Snowberry
ALSI/SHRUB	Alnus sinuata/Shrub Mountain (Sitka) alder/Shrub
ARAR/AGSP	Artemisia arbuscula/Agropyron spicatum Low sagebrush/Bluebunch wheatgrass
ARAR/FEID	Artemesia arbuscula/Festuca idahoensis Low sagebrush/Idaho fescue
ARTR/AGSP	Artemia tridentata/Agropyron spicatum Big sagebrush/Bluebunch wheatgrass
ARTR/FESC	Artemia tridentata/Festuca scabrella Big sagebrush/Rough fescue
ARTR/FEID	Artemia tridentata/Festuca idahoensis Big sagebrush/Idaho fescue
ARTRI/FEID	Artemia tripartita/Festuca idahoensis Threetip sagebrush/Idaho fescue
POFR/FESC	Potentilla fruticosa/Festuca scabrella Shrubby cinquefoil/Rough fescue
POFR/FEID	Potentilla fruticosa/Festuca idahoensis Shrubby cinquefoil/Idaho fescue
PUTR/AGSP	Purshia tridentata/Agropyron spicatum Bitterbrush/Bluebunch wheatgrass
PUTR/FESC	Purshia tridentata/Festuca scabrella Bitterbrush/Rough fescue
PUTR/FEID	Purshia tridentata/Festuca idahoensis Bitterbrush/Idaho fescue
CELE/AGSP	Cercocarpus ledifolius/Agropyron spicatum Curlleaf mahogamy/Bluebunch wheatgrass
RHTR/AGSP	Rhus trilobata/Agropyron spicatum Skunkbrush/Bluebunch wheatgrass

Abbreviation	Scientific Name Common Name
RHTR/REID	Phus trilobata/Festuca idahoensis Skunkbrush/Idaho fescue
SAVE/AGSM	Sarcobatus vermiculatus/Agropyron smithii Black greasewood/Western wheatgrass
SAVE/ELCI	Sarcobatus vermiculatus/Elymus cinereus Black greasewood/Great Basin wild-rye

3. Name and Abbreviation of Established and Proposed Research Natural Areas in the Northern Region, by Regional Analysis Area and National Forest

Regional Analysis Area and National Forest	Research Natural Area Name and Abbreviation	
NORTHERN IDAHO		
Established Areas		
Clearwater NF	Lochsa	LOA
Idaho Panhandle NF	Canyon Creek	CAK
	Montford Creek	MOK
	Tepee Creek	TEK
	Upper Fishhook	UPK
	Hunt Girl Creek	HUK
Nezperce NF	O'Hara Creek	OHK
Proposed Areas		
Bitterroot NF	Salmon Mountain	SANA
Clearwater NF	Aquarius	AQS
	Sneakfoot Meadows	SNS
	Steep Lakes	STS
Idaho Panhandle NF	Binarch Creek	BIK
	Bottle Lake	BOE
	Bull Run Creek	BUK
	Kaniksu Marsh	KAH
	Pond Peak	POK
	Pot Holes	POS
	Smith Creek	SMK
	Spion Kop	SPP
	Theriault Lake	THE
	Upper Priest River	UPR
	Upper Shoshone Creek	UPKA
Nezperce NF	Little Granite Creek	LIK
	Moose Meadow Creek	MOKA
	No Business Creek	NOK
NORTH DAKOTA		
Established Areas		
Custer NF	Two Top-Big Top	TWP
Proposed Areas		
Custer NF	Limber Pine Outlier	LIR

Regional Analysis Area and National Forest	Research Natural Area Name and Abbreviation	
WESTERN MONTANA		
Established Areas		
Flathead NF	Coram	COM
Proposed Areas		
Bitterroot NF	Bitterroot Mtn/ Snow Avalanche	BIE
	Boulder Creek	BOK
	Lower Lost Horse Canyon	LONA
	Upper Lost Horse Canyon	UKL
Bitterroot/Deerlodge NFs	Sapphire Divide	SAE
Flathead NF	Swan River	SWR
Kootenai NF	Lower Ross Creek	LOK
	Ulm Peak	ULKA
Lolo NF	Barktable Ridge	BAE
	Carlton Ridge	CAE
	Plant Creek	PLK
	Pyramid Peak	PYK
	Sheep Mountain Bog	SHG
CENTRAL AND EASTERN MONTANA		
Established Areas		
Beaverhead NF	Cliff Lake	CLE
	Cottonwood Creek	COK
Custer NF	Poker Jim Creek	POK
Proposed Areas		
Beaverhead NF	Butch Hill	BUL
Custer NF	Lost Water Canyon	LON
Gallatin NF	Wheeler Ridge	WHG
Helena NF	Granite Butte	GRE
	Red Mountain	REN
Lewis & Clark NF	Paine Gulch	PAH

APPENDIX B: THE DISAGGREGATION OF STATE FISH AND WILDLIFE GOALS TO NATIONAL FORESTS[1/]

Table B-1. Northern Region anadromous fish production, 1970-78 mean and 1990 and 2000 goals for smolts and returning adults, by National Forest and species.

Species by National Forest	Numbers of Smolts and Returning Adults		
	1970-78 Mean Smolts/Returning Adults	1990 Goals* Smolts/Returning Adults	2000 Goals* Smolts/Returning Adults
Bitterroot			
Spring Chinook	54,360/1,086	61,688/1,250	126,180/2,500
Summer Chinook	720/15	13,175/264	25,500/510
Fall Chinook			
Steelhead	67,000/1,470	58,016/1,276	118,400/2,605
Clearwater			
Spring Chinook	187,240/3,742	217,310/4,350	424,620/8,700
Summer Chinook	3,840/70	68,000/1,360	136,000/2,720
Fall Chinook			
Steelhead	254,600/5,586	225,160/4,954	615,680/13,500
Nezperce			
Spring Chinook	362,400/7,242	422,002/8,400	841,200/16,800
Summer Chinook	7,440/155	131,325/2,626	263,500/5,270
Fall Chinook	145,000/2,900	50,000/100	100,000/2,000
Steelhead	348,400/7,644	308,824/6,770	449,920/9,895

1/ These State Fish and Wildlife goals and the proposed threatened and endangered species recovery goals were developed with limited knowledge of the real capabilities and opportunities of the individual Forests. Therefore, goals shown here are to be considered tentative until they have been confirmed or changed through the Forest planning process, including the required coordination with the appropriate agencies.

* These figures are dissagregated from State goals set by the State of Idaho Department of Fish and Game. National Forests will evaluate them in Forest land and resource management planning. The 2000 goals are also estimated to be the National Forest biological potential.

Goals for the State of Idaho are derived from "A Plan for the Future Management of Idaho's Fish and Wildlife Resources", Volume 1, Goals, Objectives and Policies 1975-1990, Idaho Department of Fish and Game, January 1, 1978, Boise, Idaho; and from "Comprehensive Plan for Production and Management of Columbia River Basin", Anadromous Salmon and Steelhead, Columbia River Fisheries Council, September 1980, Portland, Oregon.

Table B-2. Northern Region catchable trout, 1981 existing population numbers and 1990 and 2000 goals, by National Forest.

National Forest	1000's of Catchable Trout		
	1981	1990*	2000*
Beaverhead	116	135	177
Bitterroot	115	135	178
Clearwater	116	135	177
Custer	232	270	359
Deerlodge	116	135	177
Flathead	1,044	1,250	1,598
Gallatin	522	622	799
Helena	58	70	97
Idaho Panhandle	2,142	2,480	3,277
Kootenai	870	1,000	1,333
Lewis & Clark	116	135	177
Lolo	174	200	265
Nezperce	116	135	177

*These figures are disaggregated from State goals set by the State of Idaho Department of Fish and Game and the State of Montana Department of Fish, Wildlife and Parks. National Forests will evaluate them in Forest land and resource management planning.

Goals for the State of Idaho are derived from "A Plan for the Future Management of Idaho's Fish and Wildlife Resources", Volume 1, Goals, Objectives and Policies 1975-1990, Idaho Department of of Fish and Game, January 1, 1978, Boise, Idaho.

The goals for Montana were derived from "1978 Montana State-wide Comprehensive Outdoor Recreation Management Plan (SCORP) - A Strategic Plan for the Protection, Perpetuation and Use of Montana's Wildlife, Fish and Recreation Resources", Montana Department of Fish and Game, March 1, 1978, Helena, Montana.

Table B-3. Northern Region elk, 1981 existing population numbers and 1990 and 2000 goals, by National Forest.

National Forest	Numbers of Elk		
	1981	1990*	2000*
Beaverhead	11,900	13,300	15,500
Bitterroot	5,750	6,500	7,760
Clearwater	7,500	9,000	12,000
Custer	700	755	900
Deerlodge	5,600	6,270	7,300
Flathead	5,600	6,250	7,300
Gallatin	9,800	11,000	12,750
Helena	4,900	5,480	6,400
Idaho Panhandle	6,000	7,200	9,600
Kootenai	4,900	5,480	6,400
Lewis & Clark	10,500	11,700	13,650
Lolo	11,200	12,500	14,600
Nezperce	7,000	8,400	11,200

*These figures are disaggregated from State goals set by the State of Idaho Department of Fish and Game and the State of Montana Department of Fish, Wildlife and Parks. National Forests will evaluate them in Forest land and resource management planning.

Goals for the State of Idaho are derived from "A Plan for the Future Management of Idaho's Fish and Wildlife Resources", Volume 1, Goals, Objectives and Policies 1975-1990, Idaho Department of of Fish and Game, January 1, 1978, Boise, Idaho.

The goals for Montana were derived from "1978 Montana State-wide Comprehensive Outdoor Recreation Management Plan (SCORP) - A Strategic Plan for the Protection, Perpetuation and Use of Montana's Wildlife, Fish and Recreation Resources", Montana Department of Fish and Game, March 1, 1978, Helena, Montana.

Table B-4. Grizzly bear population recovery goals, by National Forest in the Northern Region and grizzly bear ecosystem. 1/

National Forest	Total No. of Grizzly Bear	Grizzly Bear Ecosystem			
		Yellow-stone	Northern Continental Divide	Cabinet - Yaak	Selkirk Mtns.
Custer	9	9	-	-	-
Flathead	207	-	207	-	-
Gallatin	31	31	-	-	-
Helena	18	-	18	-	-
Idaho Panhandle	25	-	-	12	13
Kootenai	58	-	13	45	-
Lewis & Clark	81	-	81	-	-
Lolo	28	-	22	6	-

1/ These population goals were dervied from the Grizzly Bear Recovery Plan (Agency Review Draft), US Fish and Wildlife Service, Department of the Interior, 1980; Denver Regional Office, September 22, 1980, unpublished, Denver, Colorado

Table B-5. Gray wolf population recovery goals, by National Forest in the Northern Region and gray wolf ecosystem. 1/

National Forest	Total No. of Gray Wolf	Gray Wolf Ecosystem		
		Central Idaho	North-Western Montana	Yellowstone National Park and vicinity
Clearwater	10	10	-	-
Custer	5	-	-	5
Flathead	15	-	15	-
Gallatin	5	-	-	5
Kootenai	5	-	5	5
Lewis & Clark	10	-	10	-
Nezperce	10	10	-	-

1/ These population goals were derived from Northern Rocky Mountain Recovery Team recommendations outlined in their May 5, 1980, letter to the Fish and Wildlife Service, Department of the Interior. Their letter was forwarded with additional comments to the Northern Region Regional Forester by the Director of the Denver Regional Office of the Fish and Wildlife Service in a letter dated October 8, 1980.

Table B-6. Target mountain caribou population on the Idaho Panhandle National Forests, Colville National Forest and British Columbia, Canada 1/

Idaho Panhandle National Forests Colville National Forest	Number of Mountain Caribou
Target Population	100

1/ The target population refers to the management of the existing occupied mountain caribou habitat found on the Idaho Panhandle National Forests- Northern Region, Colville National Forest-Pacific Northwest Region, and adjacent occupied habitat in British Columbia, Canada. The target population objective provides a reference point for managing the habitat of this sensitive species so that it does not become a Federally listed threatened or endangered species.

* GPO 798 - 740 1981